C-more Touch Panels

Section 10

C-more Micro Touch Panels

Section 11

Optimates, DV-1000, Lookout*Direct*, Point of View HMI/SCADA and Industrial Monitors

Section 12

Atlas Industrial Monitors

Section 12

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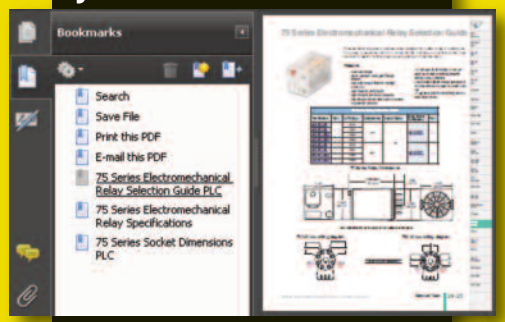

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- Click on part #s to link directly to our online store for current pricing, specs, stocking information and more

Operator Interface

OptiMate Panels Overview

OP-400 Series

OP-600 Series

OP-1000 Series

Overview

Our OptiMate line offers another option for operator interface users. The units offer many features at a low cost.

You can connect the panels to your application by using the configuration software and ladder logic in your program.

Compatibility

OP-400 series, OP-600 series and OP-1000 series panels all work with DL05, DL06, DL105, DL205, DL305, DL405, Allen-Bradley SLC 5/03, 5/04, 5/05 and MicroLogix 1000/1200/1500 PLCs.

OP-1000 series panels and the OP-9001 also work with GE Fanuc Series 90 Micro, GE 90/30 Series (SNP) and Modbus RTU PLCs.

All panels require setup using our OP-WINEDIT configuration software. Simply choose the proper cable and particular type of CPU in our configuration software.

A single OP-400 series panel can be used with one CPU port, while single or multiple (up to 31 panels using an OP-9001 communications panel) OP-600 and OP-1000 series panels can be used with one CPU port.

Choosing the right panel

The following pages show a quick summary of our OptiMate operator interface panels and the key features associated with them. Here are a few helpful hints to consider as you're reviewing the features:

Do you need just a simple message display? If so, look at the OP-420, OP-440, OP-620 or OP-640.

Do you need pushbuttons or panel lamps without message capability? Then look at the OP-406, OP-609, OP-613, OP-1124(-1), OP-1224 or OP-1212.

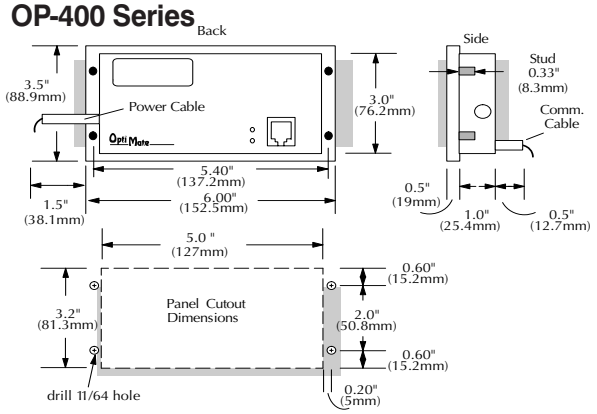
Do you need a simple setpoint panel? If so, check out the OP-413, OP-414, OP-613, or OP-1312.

Do you need programmable function keys and a display? Then look at the OP-420, OP-620, OP-640, OP-1500 or OP-1510.

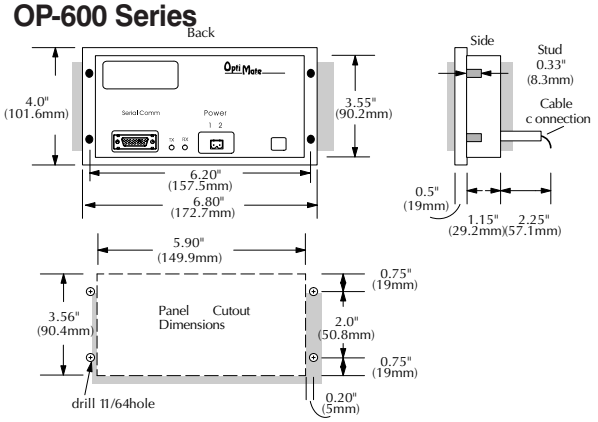
OptiMate Panels Specifications

OptiMate Panel Specifications				
Specifications	***OP-400 Series***	***OP-600 Series***	***OP-1000 Series***	***OP-9001***
Units per CPU	One per port	1 or multiple (up to 31 with OP-9001)	1 or multiple (up to 31 with OP-9001)	One per port
Service Power (Input)	5VDC	8-30VDC		8-30VDC
Power Consumption	OP-406 0.25W @ 5VDC OP-413 0.80W @ 5VDC OP-414 0.85W @ 5VDC OP-420 0.58W @ 5VDC OP-440 0.75W @ 5VDC	OP-609 2.4W @ 8-30VDC OP-613 3 W @ 8-30VDC	OP-1124 10W @ 8-30VDC OP-1212 7W @ 8-30VDC OP-1224 4W @ 8-30VDC	3.85W @ 8-30VDC
In-Rush Current	.35-.44A for 1ms	1.5-2.0A for 2ms max.		n/a
Serial Communication	PLC port RS-232 RJ12	PLC Port RS-232/422 15 pin D-sub (female)		One-RS-232/422 to PLC Two-RS-422 to OP panels (3 DB15 female)
Max. Cable Length	RS-232: 50ft	RS-232: 50ft. RS-422/OP-9001: 4000ft		4000ft. shielded cable 30ft. ribbon cable
Configuration Software	OP-WINEDIT			
Environmental Specifications				
Enclosure	NEMA 4			
Agency Approval	UL (file #E182843), CUL, CE			
Operating Temperature	32 to 122°F (0 to 50°C)			
Storage Temperature	-4 to 158°F (-20 to 70°C)			
Humidity	10-95% R.H. (non-condensing)			

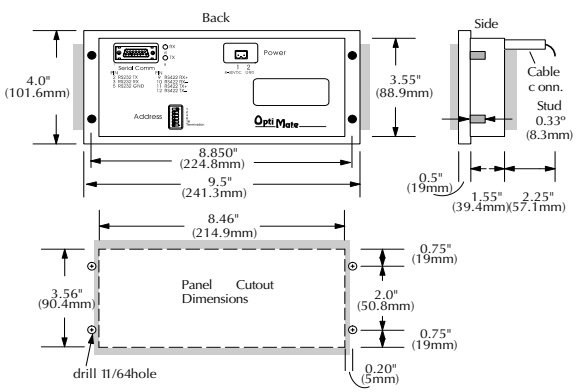
OP-400 Series



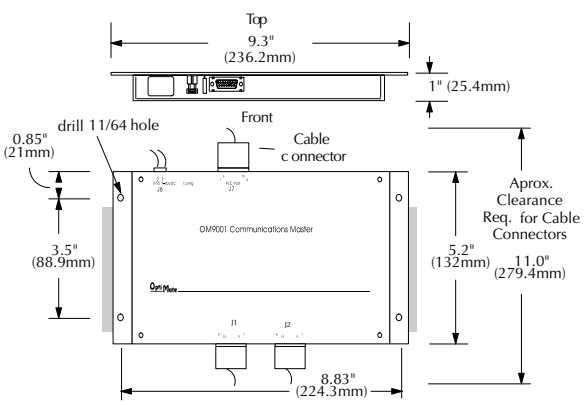
OP-600 Series



OP-1000 Series



OP-9001



OptiMate 400/600 Series

OP-406 <---->

Indicator/pushbutton panel

- Four User-defined function keys with LED indicators
- Six LED annunciator lamps

OP-413 <---->

Setpoint/display panel

- Read/write six PLC data registers with a bank of data locations
- Four-digit numeric display
- Make setpoint adjustments by using select button and arrows to change values

OP-414 <---->

Setpoint/display panel

- Read/write six PLC data registers with a bank of data locations
- Eight-digit numeric display, allows BCD double operations
- Make setpoint adjustments by using select button and arrows to change values

OP-420 <---->

Operator panel

- 2x20 character LCD display
- Four function keys with LEDs
- Display up to 160 pre-defined messages which reside in the panel's memory

OP-440 <---->

4-line display panel

- 4x20 character LCD display with the ability to display text, BCD double, binary and floating-point numbers
- Display up to 160 predefined messages which reside in the panel's memory

OP-PS400 <---->

Power Supply

- External 5 VDC power supply for OP-400 series panels
- Plugs into standard 120 VAC receptacle

OP-609 <---->

Combination panel

- Nine user-defined function keys with LED indicators
- Six LED annunciator lamps

OP-613 <---->

Setpoint/display panel

- Read/write 4 PLC data registers with a bank of data locations
- Four-digit numeric display
- Make setpoint adjustments by using select button and arrows to change values
- Four user-defined function keys with LED indicators
- Two LED annunciator lamps

OP-620 <---->

Operator panel

- 2x20 character LCD display
- Five function keys with LED indicators
- Five control keys with menu tree capability
- Display up to 160 pre-defined messages which reside in panel's memory

OP-640 <---->

4-Line display panel

- 4x20 character LCD display with the ability to display text, BCD double, binary and floating point numbers
- Five function keys
- Three LED annunciator lamps
- Display up to 160 predefined messages, which reside in panel memory

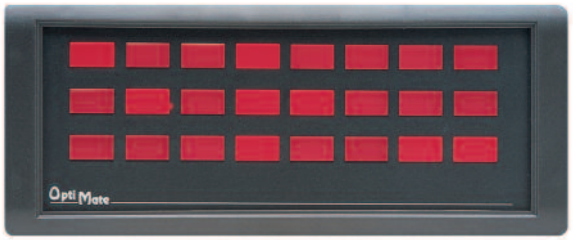
Note: OP-PS400 is required for panel configuration and operation of all OP-400 series panels. Do not power from PLC communications port.

OptiMate 1000 Series

OP-1124 <--->

Annunciator panel

- 24 high-intensity LED annunciator lamps
- Interchangeable colors (red, green, yellow)
- Create custom labels
- OP-1124-1 (<--->) comes with one row each of red, yellow and green light bars already installed



OP-1224 <--->

Pushbutton panel

- 24 individual pushbuttons with LED indicators
- Create custom labels

OP-1212 <--->

Combination panel

- 12 high-intensity LED annunciator lamps
- Interchangeable colors (red, green, yellow)
- 12 pushbuttons with LED indicators
- Create custom labels

OP-1312 <--->

Setpoint/display panel

- Read/Write 12 PLC data registers with 3 banks of four data locations, each with a 4-digit display
- Create custom labels
- Three control keys for each bank of data locations
- Make setpoint changes using the arrow control keys

OP-1500/OP-1510 <--->

Operator panel

- 2x20 character LCD display
- Full numeric keypad
- Five function keys with LED status (OP-1510 uses 3 for menu functions)
- Three LED annunciator lamps
- Build and store up to 160 messages in the unit
- Menu capability (OP-1510)

OptiMate Accessories

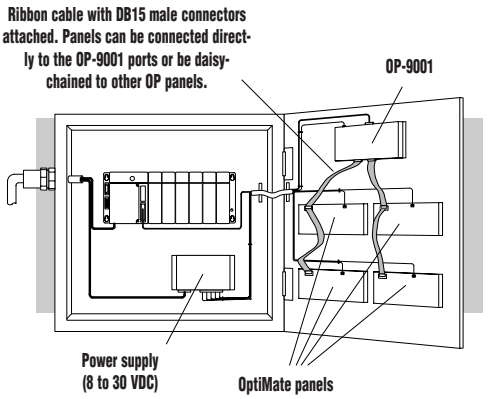
OP-9001 <---->

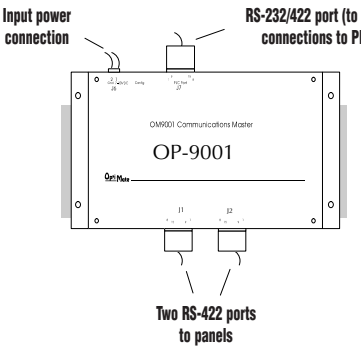
Communications master

The OP-9001 is a communication master unit for connecting two or more (up to 31) OP-600 and OP-1000 series OptiMate panels to a single CPU communications port. It connects to any *Direct*LOGIC, Allen-Bradley 5/03, 5/04, GE Series 90/30, GE Series 90 Micro, and Modicon (Modbus RTU) CPU.

Note: The OP-9001 cannot be used with OP400 series panels.

The adjacent figure is a typical multi-drop arrangement using an OP-9001 connected to four OptiMate Panels. The OP-9001 is surface-mounted to the cabinet. Notice the adequate space available to route cables and allow for proper clearance. All the panels are configured using OP-WINEDIT software.


Ribbon cable with DB15 male connectors attached. Panels can be connected directly to the OP-9001 ports or be daisy-chained to other OP panels.
OP-9001
Power supply (8 to 30 VDC)
OptiMate panels



OP-WINEDIT <---->

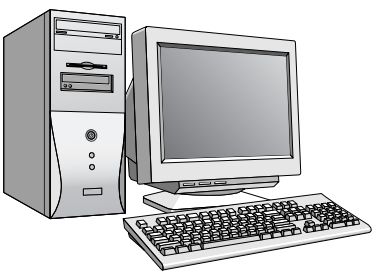
Configuration software

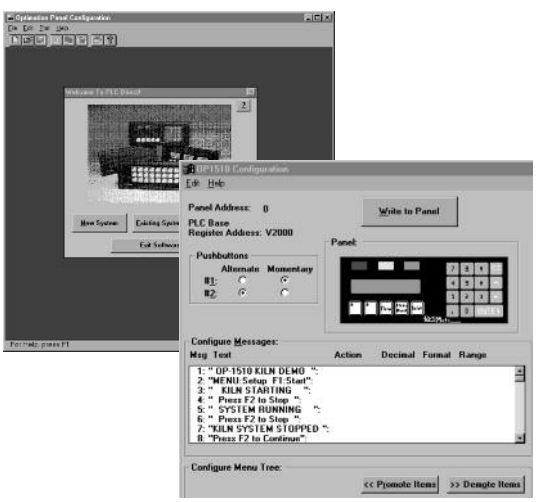
All of the OptiMate panels (including the OP-9001 communication master) are configured using the OptiMate OP-WINEDIT configuration software.

OP-WINEDIT software is compatible with computers running Windows 2000 SP4, Windows XP SP3 32 and 64 bit, and Windows 7 (32 and 64 bit).

Simply load the software onto your personal computer. The simple setup instructions are described in the supplied manual and in the built-in HELP screens. The software allows setup of your complete panel applications, including the type of PLC being used, communications protocol, type of panel (or panels) being used, and in some cases, the format of the message text for the LCD display. Some panels even include the ability to design a menu tree. The setup steps are similar for all OptiMate panels. Use cable OP-CCBL to connect a PC to OP-400 series panels, or OP-ACBL-1 to connect to OP-600 or OP-1000.

Note: When using the OptiMate 600 series panels (except for the OP-640), OP-WINEDIT software version 2.0 or later is required. When using the OptiMate 400 series panels or the OP-640, version 2.3 or later is required.





OptiMate Cables

Cables for OptiMate Panel-to-PLC Connection				
PLC Family	**CPU (or other device)**	**CPU Port**	**Cables for 600/1000 Series**	**Cables for 400 Series**
DirectLOGIC™ DL05	DL05: D0-05	Port 1	OP-2CBL	OP-2CBL-2
		Port 2	OP-2CBL	OP-2CBL-2
DirectLOGIC™ DL06	DL06: D0-06	Port 1	OP-2CBL	OP-2CBL-2
		Port 2	OP-2CBL-1	not available***
DirectLOGIC™ DL105	DL105: F1-130	Only one	OP-2CBL	OP-2CBL-2
DirectLOGIC™ DL205	D2-230	Only one	OP-2CBL	OP-2CBL-2
	D2-240	Top port	OP-2CBL	OP-2CBL-2
		Bottom port	OP-2CBL	OP-2CBL-2
	D2-250-1 D2-260	Top port	OP-2CBL	OP-2CBL-2
		Bottom port	OP-2CBL-1	not available***
	D2-DCM (module)	Only one	OP-4CBL-2****	not available***
DirectLOGIC™ DL305	D3-330	Requires DCU*	OP-4CBL-2****	not available***
	D3-330P	Requires DCU*	OP-4CBL-2****	not available***
	D3-340	Top port	OP-3CBL	OP-3CBL-1
		Bottom port	OP-3CBL	OP-3CBL-1
	D3-350	Top port	OP-2CBL	OP-2CBL-2
		Bottom port	OP-4CBL-2****	not available***
DirectLOGIC™ DL405	D4-430	Top port (15-pin)	OP-4CBL-1	OP-4CBL-3
		Bottom port (25-pin)	OP-4CBL-2****	not available***
	D4-440	Top port	OP-4CBL-1	OP-4CBL-3
		Bottom port	OP-4CBL-2****	not available***
	D4-450	Phone jack	OP-2CBL	OP-2CBL-2
		Top port (15-pin)	OP-4CBL-1	OP-4CBL-3
		Bottom port (25-pin)	OP-4CBL-2****	not available***
	D4-DCM (module)	Only one	OP-4CBL-2****	not available***
	Slice I/O panels	Only one	OP-4CBL-1	OP-4CBL-3
GE® Series 1	IC610CPU105, 106	Requires DCU*	OP-4CBL-2****	not available***
GE® Series 90/30	All models (311-351)	RS422 serial port	not available***	not applicable
GE® Fanuc™ Series 90 Micro	All models	RS422 Serial port	not available***	not applicable
MODICON	ModBus	RJ45 port	OP-MCBL-1**	not applicable
TI305™/ SIMATIC® TI305™	325-07, PPX:325-07	Requires DCU*	OP-4CBL-2****	not available***
	330-37, PPX:330-37	Requires DCU*	OP-4CBL-2****	not available***
	325S-07 (or 325 w/Stage Kit)	Requires DCU*	OP-4CBL-2****	not available***
	330S-37, PPX:330S-37	Requires DCU*	OP-4CBL-2****	not available***
	335-37, PPX:335-37	Only one	OP-3CBL	OP-3CBL-1
		If DCU is used*	OP-4CBL-2****	not available***
TI405™/ SIMATIC® TI405™	425-CPU, PPX:425-CPU	Only one	OP-4CBL-1	OP-4CBL-3
	430-CPU, PPX:430-CPU	Top port (15-pin)	OP-4CBL-1	OP-4CBL-3
		Bottom port (25-pin)	OP-4CBL-2****	not available***
	435-CPU, PPX:435-CPU	Top port (15-pin)	OP-4CBL-1	OP-4CBL-3
		Bottom port (25-pin)	OP-4CBL-2****	not available***
	Smart Slice™ I/O panels	Only one	OP-4CBL-1	OP-4CBL-3
Allen-Bradley™ SLC 500	5/03 5/04	Bottom port	OP-ACBL-1	OP-ACBL-3
Allen-Bradley™	MicroLogix 1000/1200/1500	Only one	OP-ACBL-2	OP-ACBL-4

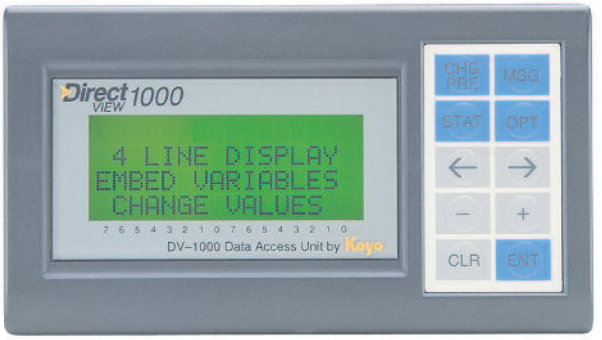
*** Requires RS-232 Data Communications Unit (D3-232-DCU)**

**** 1000 series panels only**

***** Cables for connecting to these ports must be built by the user. Pinout diagrams are in the OptiMate panel user manual or online.**

****** OP-4CBL-2 cables are no longer available. Please consider EA-4CBL-2 for a comparable replacement.**

*Direct*View 1000



4-line by 16-character backlit LCD display

DV-1000 <--->

Overview

The *Direct*View DV-1000 is a small, low-cost operator interface. The DV-1000 can be directly connected to DL05, DL06, DL105, DL205, D3-350 or DL405 CPUs. The DV-1000 is a "ladder logic dependent" terminal which relies entirely on PLC ladder logic to perform its functions. The DV-1000 does not require any configuration software. Instead, setup is performed through special reserved memory locations inside of the CPU. These special memory areas tell the DV-1000 which modes to use, and more importantly, where to get its display data. The following functions can be performed by the DV-1000:

View memory status: Display up to four variable address values at a time on a single screen.

View bit status: Display 32 bits (4 lines of 8 bits) or 64 bits (4 lines of 16 bits) at a time on a single screen. Bit data types can include I/O points, control relays, timer/counter and stage bits.

Change values of memory locations: Up to 16 different variable memory values can be changed (32 for DL405). Just move the cursor over the appropriate digit and press the increment (+)/decrement (-) keys.

Units per CPU: Only one DV-1000 per CPU.

Specifications	
Cable Required	DV-1000CBL or D4-1000CBL. See the following page
Max. Distance	15 feet from the CPU
Connector	Phone jack RJ12
Power Consumption	150mA @ 5VDC max (supplied by PLC communication port)
NEMA Rating	None
Agency Approval	UL, CUL, CE
Storage Temp	-4 to 158°F (-20 to 70°C)
Operating Temp	32 to 122°F (0 to 50°C)
Humidity	5-95% (non-condensing)
Vibration Resistance	MIL STD 810C Method 514.2
Shock Resistance	MIL STD 810C Method 516.2
Noise Immunity	NEMA (ICS3-304)
Atmosphere	No corrosive gases
Manufacturer	Koyo Electronics

Part Number	Price	Description
DV-1000	<--->	***Direct***View 1000 Timer/Counter access unit for ***Direct***LOGIC PLCs
DV-1000CBL	<--->	Shielded cable to connect to ***Direct***LOGIC PLCs, (RS-232C)
D4-1000CBL	<--->	Shielded cable to connect to 15-pin port on DL405 PLCs (RS232C)

Display user-defined messages, even with embedded V-memory values: Each line may contain a maximum of four embedded values. Messages are stored in CPU variable memory. Therefore, the number of messages is limited only by available CPU variable memory.

Display system-defined error messages and user-defined fault messages even in list format: Scroll through errors and messages. Error logs can even show time and date stamps on DL06 family, D2-240, D2-250-1, D2-260, D3-350, D4-440, D4-450 CPUs.

Is the DV-1000 right for you?

The DV-1000 is best suited for displaying information and occasionally changing setpoint parameters. To use the DV-1000 you should be very comfortable with ladder logic programming. If you're looking for an operator control panel, you should consider the *C-more* family of panels. They are better suited for applications that require operator interaction as a normal part of operation.

Which CPU is best to use with the DV-1000?

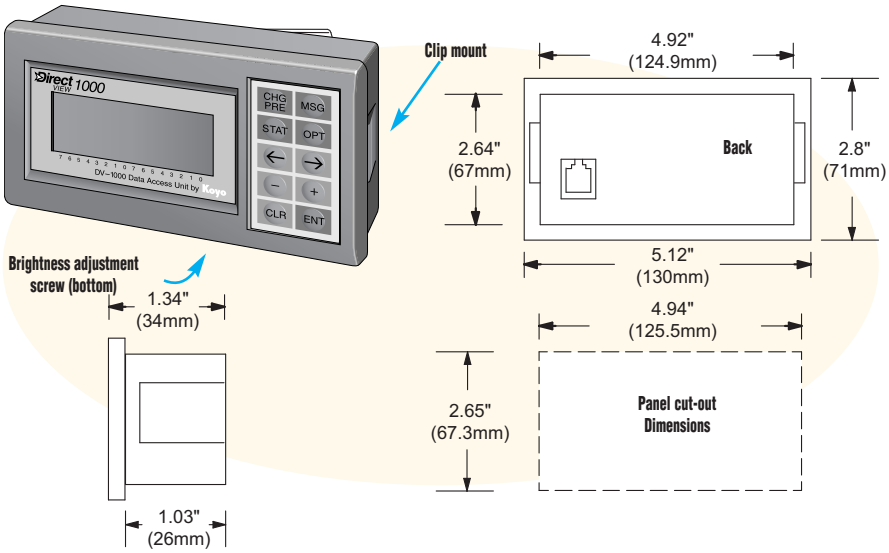
The DL05, DL105, DL06, D2-240, D2-250-1, D2-260, D3-350, D4-440, and D4-450 have ACON instructions that make the DV-1000 easier to work with. The DL105 and D2-230 have only one communication port, which can be a limitation in some cases. The DV-1000 does not work with D3-330 or D3-340 CPUs, CLICK controllers or Productivity3000 CPUs.

DV-1000 Dimensions and Installation

Installation

The DV-1000 is designed to snap into a rectangular cutout in a control panel or other surface panel. On each side of the housing there is a retention clip to keep the unit in place after installation. There are no provisions for mounting screws, so if your particular application is subject to high amounts of vibration, this may be a factor in your selection process. The drawing gives the physical dimensions of the DV-1000 housing.

The panel cut-out dimensions provide necessary clearance for the body of the unit and allow the outer housing bezel to cover the edges of the cut-out for a nice finished appearance. The optimum panel thickness for using the retention clips is 1/16"" to 1/8".



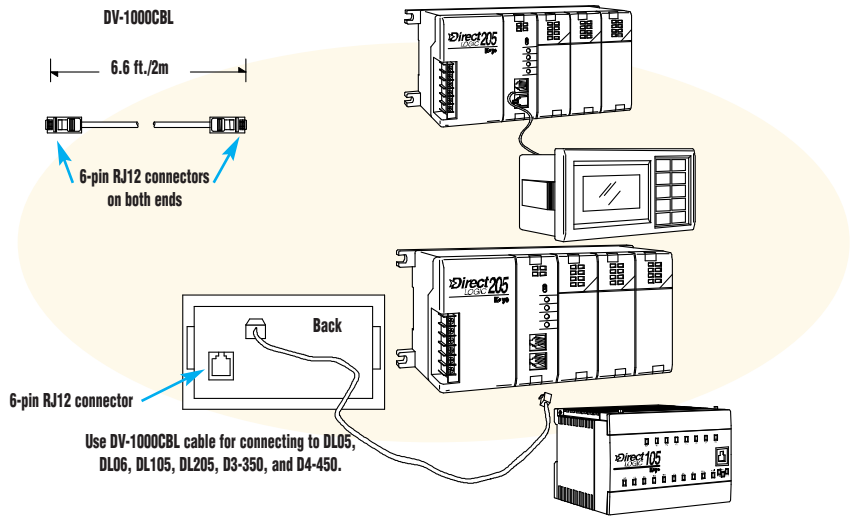
Cabling requirements

Since the DV-1000 only works with the DL05, DL06, DL105, DL205, D3-350 and DL405 CPUs, your cabling choices are fairly simple.

- **DV-1000CBL** — connects to DL05, DL06, DL105, DL205, D3-350 and D4-450 phone jack.
- **D4-1000CBL** — connects to all DL405 CPU 15-pin ports.

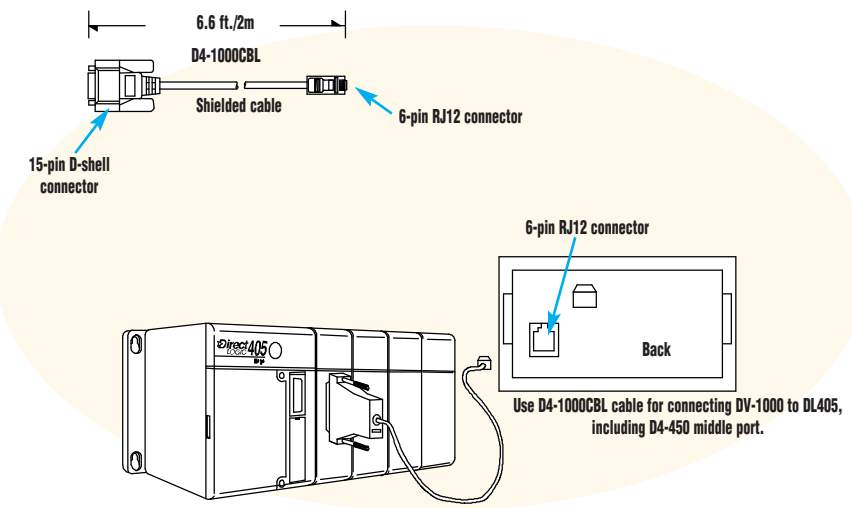
Maximum cable length of 15 feet between the DV-1000 and the PLC is recommended.

The DV-1000 can be connected to a DL205 or DL405 DCM, but you have to build your own cable.

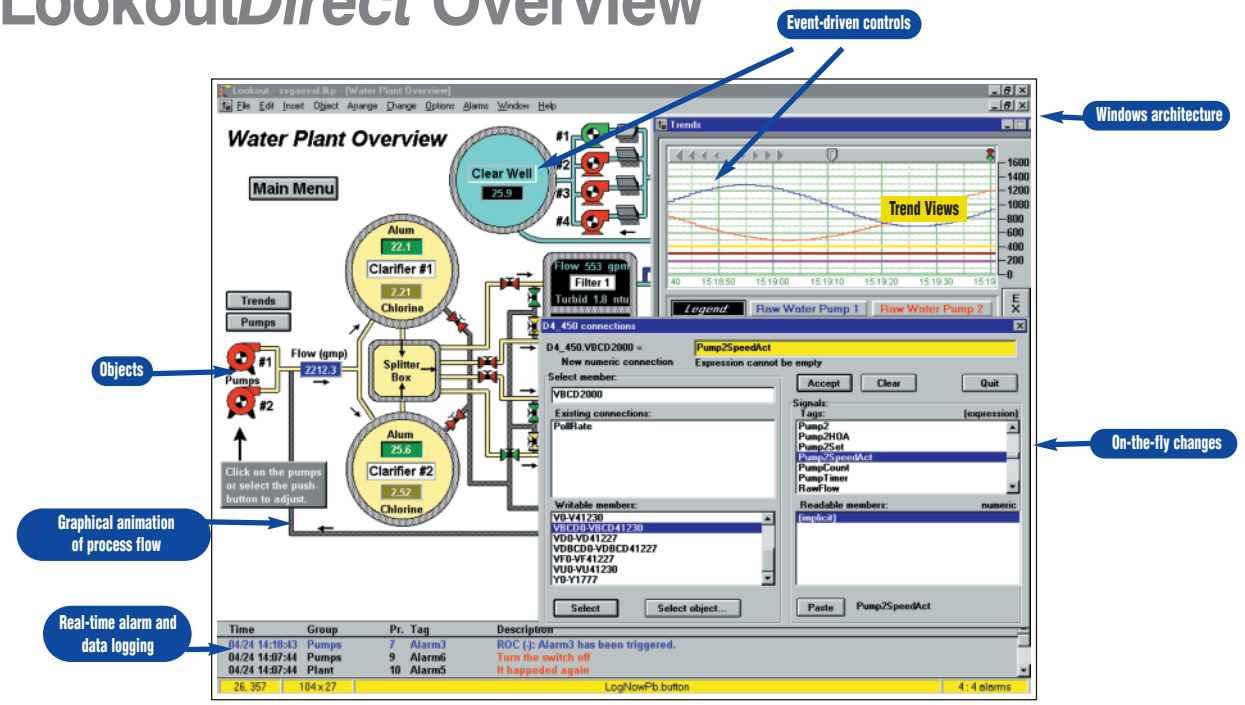

DV-1000CBL
6.6 ft./2m
6-pin RJ12 connectors on both ends
Back
6-pin RJ12 connector
Use DV-1000CBL cable for connecting to DL05, DL06, DL105, DL205, D3-350, and D4-450.

C-more Micro-Graphic

The *C-more* Micro-Graphic Panels are a more enhanced small, low-cost graphic operator interface that you may want to consider when selecting a panel. The *C-more* Micro-Graphic panels are available in both a touch screen and non-touch version. The C-more panels will work with all *Direct*LOGIC PLCs and will also work with many different 3rd party PLCs.



Lookout*Direct* Overview



The "what you need" HMI

For those of you familiar with human machine interface (HMI) products, you might recognize the name Lookout®. Marketed by National Instruments, Lookout is one of the industry's leading HMI products. We offer our own tailor-made version of the Lookout program, Lookout*Direct*.

Lookout*Direct* is a feature-packed 500- I/O version of the original package and includes drivers for the top 10 PLC/RTU products, plus our own *Direct*LOGIC driver.

Lookout*Direct* has an easy-to-use configuration package that requires no programming or scripting. Its object-oriented, event-driven architecture provides an outstanding graphical interface to your process. Users can easily create graphical representations of their devices and link those objects to their PLC system for real-time data acquisition, graphical animation, alarm generation, report printing, and network connection to your business system.

What is object-oriented?

Lookout*Direct* is fundamentally object-oriented. An object is a software model of something physical that is completely self-contained. There are many object classes, such as switches, trends, timers, drivers, etc. An object is simply an individual instance of an object class. For example, if you use 10 timers and 20 switches, you have selected only two different object classes, but a total of 30 objects. Objects have a predefined database, a set of parameters and built-in functionality. They encapsulate their data, parameters, and functionality into one bundle. Once you select the objects you need, simply connect them together as if you were physically hardwiring a control panel.

Not a programmer? Not a problem!

Developing an application in Lookout*Direct* only requires that you know how to find the letters on your keyboard and how to move and click your computer mouse. Select a data point and connect it to an object.

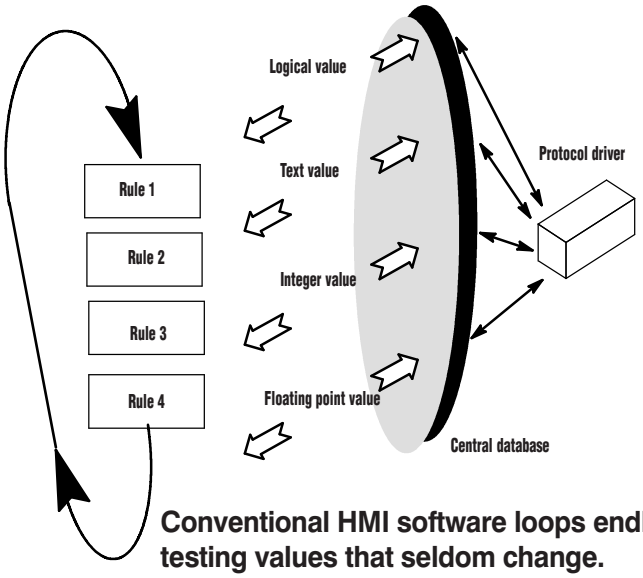
Debug online

Once you have installed your application on the plant floor, you can debug and modify it without irritating the operators. Since the process is online, even while you are editing, they won't miss important data or alarms, and you won't get kicked out of the control room! This feature alone can save a lot of time and agony.

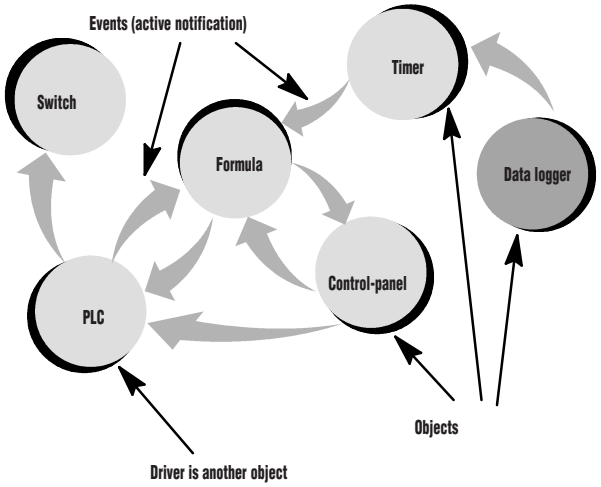
Part Number	Price	Description
PC-LKD-DEVUPG	<--->	Lookout*Direct* development package upgrade
PC-LKD-RTEUPG	<--->	Lookout*Direct* runtime package upgrade
PC-DL-PLUS	<--->	*Direct*LOGIC Plus Driver Object for National Instruments Lookout Software. Allows for connection from Lookout to the *Direct*LOGIC line of PLCs

This is a legacy product. We do not recommend it for new installations. Limited availability

Event-Driven vs Loop-Driven



Conventional HMI software loops endlessly, testing values that seldom change.



Lookout*Direct* is event-driven for efficiency and performance.

What is event-driven?

It is very important to understand that Lookout*Direct* is entirely event-driven, not loop-driven like many other industrial automation software products. The diagram above illustrates the big advantage of an event-driven application. Each object is totally independent, and remains in its current state until an event occurs. There is no waiting for the process to loop around to the top again before changing state or starting another process. However, with loop-driven software, as the loop database grows larger and larger, the response times get slower and slower. This wastes valuable time for you, your computer, and your process. This is commonly called a passive notification system.

In Lookout*Direct*, everything is event-driven – monitoring, data logging, alarming, and supervisory control. An event is triggered by changing a setpoint, turning on a switch, or activating a timer. When an event occurs, it sends a signal throughout the object network, changing only those objects related to that specific event. All non-related objects remain in their current state, using no processor time. Also, the objects themselves may generate a different event to start another process, creating a chain reaction but only affecting those objects in the chain. This event-driven approach gives Lookout*Direct* a dramatic speed advantage compared to loop-driven products. This can be referred to as an active notification system.

Event-driven vs. loop-driven

If an event-driven program is described as an active notification and a loop-driven program as passive notification, you can clearly get the idea that one is going to be more take-charge than the other. Would you rather the information get to you when you need it or as soon as it's ready, or do you want to constantly keep asking "Is it ready, is it ready?" To go a little further, imagine that you were expecting information from a lot of different sources. If you had to ask each one of them over and over for the information, not only would you waste valuable time, but also the time of the entire process. Lookout*Direct* uses event-driven architecture to avoid all of the wasted time polling or searching for information. Instead, it detects the arrival of the information.

This is a legacy product. We do not recommend it for new installations. Limited availability

Lookout*Direct* Features

Communications

Lookout***Direct*** can communicate with various external physical devices such as PLCs, RTUs, controllers, etc. In addition to our ***Direct***LOGIC PLCs and Ethernet connections, the following drivers are included:

- Allen-Bradley PLC5
- Allen-Bradley SLC500
- ASCII
- Delta-Tau (motion control)
- GE-Series 90
- Mitsubishi FX
- Modicon Modbus ASCII, Plus, RTU
- Omron
- OPC Client and Server
- TIWAY
- Field Point I/O

Networking

Browse and select networking makes connecting multiple Lookout***Direct*** stations easy within a production facility or at remote locations. Click to select and connect to any other Lookout***Direct*** PC in a TCP/IP based network, online and in real-time without shutting down your process. With the communications capabilities of Ethernet modules, virtually any number of users at any location can access the network. Not only will you be capable of sharing data across the network with other machines, but you will be able to link other Windows applications (via OPC) directly to Lookout***Direct***.

Data logging

Having complete historical records of your process is invaluable. Lookout***Direct*** creates and maintains your process history automatically with a combination of various archiving mechanisms.

- **Distributed historical data logging** — allows Lookout***Direct*** to save and retrieve data anywhere in a network
- **Spreadsheet logger** — creates standard ASCII that can be opened/edited with most spreadsheet and database programs.
- **Citadel threaded database logger** — creates a historical database that can be retrieved by the ODBC driver.
- **Event logger** — creates a chronological audit trail of "who did what and when".

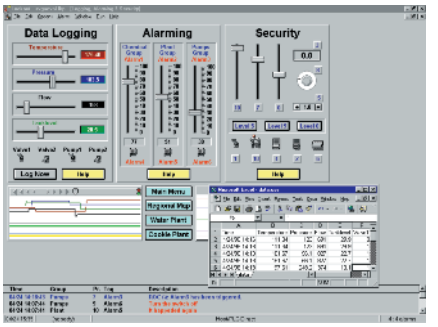
Trends

Lookout***Direct*** combines historical and real-time data in a single seamless trend graphic called Hypertrend. You can easily scroll or jump to any specific time along the trend or you can use the pop-up window to search for peaks, valleys or specific values. The software is capable of recalling and displaying data at a rate of more than 25,000 values per second. This performance provides the information you need in real time.

Supervisory control

The control capabilities range from very simple to very complex. Using object classes and complex formulas, you can create a wide variety of control devices. The devices can be connected in almost any combination to handle almost any situation.

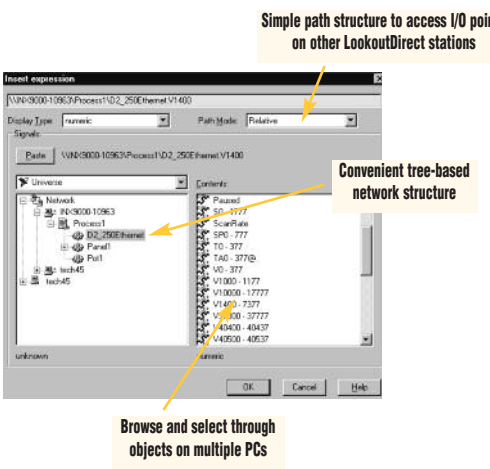
Alarming



Lookout***Direct*** provides you with an alarm set that most other packages offer, plus more. It triggers alarms with an event or any combination of events you specify. Alarms can be as simple or as complex as needed. The alarming is so versatile that you can group your alarms in any manner, turn off any nuisance alarms, prioritize them, and acknowledge alarms and events from anywhere in the network.

Security

A well-designed security system prevents unauthorized access while remaining transparent to the user. Lookout***Direct*** allows you to quickly log on to respond to any situation and keeps a permanent record of all actions while you are logged on.


Simple path structure to access I/O points on other LookoutDirect stations
Convenient tree-based network structure
Browse and select through objects on multiple PCs

This is a legacy product. We do not recommend it for new installations. Limited availability

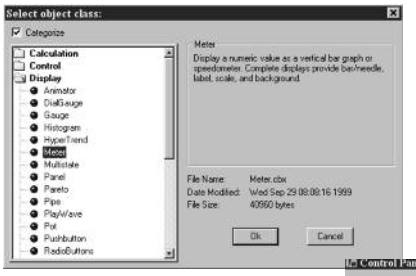
Lookout*Direct* Features

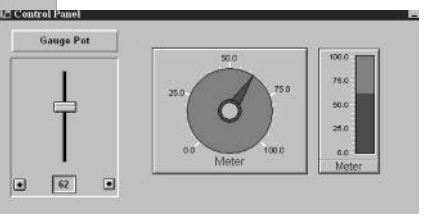
Lookout*Direct* Features			
Alarms	• Simple and complex alarm capabilities • 10 priority levels and unlimited groups • Unwanted/nuisance alarms filtered out • Ability to acknowledge individually, by group, or priority • Distributed alarming allows acknowledgement from any node on network • Automatic report generation of alarm history • Audio wave (.wav) files attached to alarms	***Recipe***	• Build recipes in Excel and import • 255 ingredients and 1000 separate recipes per object • Unlimited number of recipe objects; download new recipes on-line
Architecture	• Unique object-oriented design makes Lookout*Direct* extremely easy to learn and use and provides you with dozens of prebuilt tools. • Event-driven engine: it is a high performance system that can handle large projects with fast response time • True on-line configuration: modify your application without shutting down the process	***Report Generation***	• Create reports on control panel and send to printer • Launch third-party programs to generate complex reports • Preconfigured alarm and event reports
Data Logging	• Spreadsheet object creates standard ASCII text files in .csv format • Simple or complex logging trigger mechanisms • High-speed data logging with Citadel database • Efficient data compression for minimal disk usage • Filter signals to reduce unnecessary logging • Event logging of setpoint adjustments and complex/custom events	***Security***	• 10 security levels with password protection • Viewing security hides "sensitive" data • Control security prevents low-level operators from adjusting setpoints • Developer can "lock" executable to prevent unauthorized modifications • System security "locks" and prevents access to other programs • Action verification prompts you before making adjustments • Event logger creates permanent audit trail
Expressions/ Formulas	• Logical (Boolean) functions • Lookup functions • Mathematical functions • Statistical functions • Text functions • Trigonometric functions • Date/time functions	***Supervisory Control***	• Neutral zone (on/off control) • Sequencing • Timers (elapsed, delay on, delay off, pulse, one shot, interval, time of xxx, etc.) • Complex functions (mathematical, Boolean, lookup, arithmetic, trigonometric, text, date/time)
Graphics	• Ability to handle custom bitmaps and metafiles • Extensive graphical library included • Ability to import AutoCAD files as bitmaps or metafiles • Complex animation in X, Y and Z axis • Multi-state animation pumps, valves, motors and more • Variable speed rotation • Capable of Windows color depths and resolutions	***Telemetry***	• Radio with/without adjustable RTS/CTS timers • Full duplex and half duplex • Dial-up phone lines (Modbus RTU only) • Leased phone lines • Complex polling algorithms • Multiple protocols over a single radio frequency or phone line • Automatic data blocking
Networking	• Browse and select networking • View screens simultaneously on separate nodes • Make setpoint adjustments from any node • Acknowledge alarms from any node • Configure specific nodes for monitoring only • Configure peer-to-peer or client-server	***Trending***	• Integrated historical/real-time data in a single trend • Forward/backward scroll bar built in • High-speed access to historical data on hard drive • Cursor bar gives precise values at intersections • Ability to "jump" to specific point in time • Pan and zoom
New Connection and Object Browser	• View all object connections in a simple tree-based diagram • Debug connections by using convenient right-click "follow connection" command • Use drag-and-drop in creating objects for fast application development • Make connections to other Lookout*Direct* stations across the network in real-time	***Windows Connectivity***	• 32-bit for Windows NT/98/2000/WIN ME/XP (NT, 2000 or XP Pro recommended) (Does not support Windows Vista.) • OPC Client/ server capability for business system connectivity • Use the open database connectivity (ODBC) driver to retrieve data from the Citadel database • Use dynamic data exchange (DDE) to send/receive data to/from third-party software • Use spreadsheet object to create ASCII text files

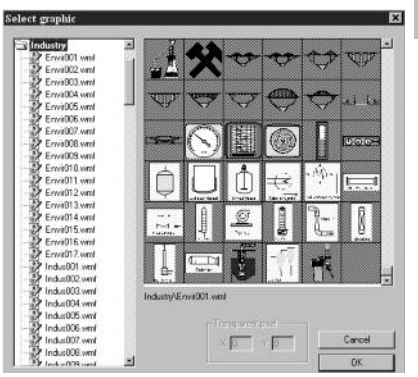
This is a legacy product. We do not recommend it for new installations. Limited availability

*Direct*LOGIC PLUS

Due to the popularity of our ***Direct***LOGIC driver object and other features included in the Lookout***Direct*** software package, we are pleased to offer ***Direct***LOGIC PLUS for National Instruments Lookout.



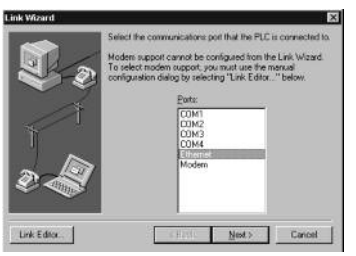




*Direct*LOGIC driver object features

The Driver Object is the biggest feature and the driving force behind this product. The Ethernet connection to ECOM modules that is included is the best feature because of the high speed and flexibility it provides your application.

- Allows for connection to DL05/06 DL205 and DL405 ECOMs
- Connection to DL105 and DL305 PLCs
- Capability of using ***Direct***SOFT and Lookout simultaneously over the same cable (driver versions must match)
- Link Wizard automatically identifies CPU and configures your settings



Part Number	Price	Description
PC-DL-PLUS	<--->	***Direct***LOGIC PLUS Driver Object for National Instruments Lookout Software. Allows for connection from Lookout to the ***Direct***LOGIC line of PLCs

This is a legacy product. We do not recommend it for new installations. Limited availability

Lookout*Direct* System Requirements

One of the nice things about Lookout***Direct*** software is that it can easily run on industrial PCs or inexpensive, off-the-shelf PCs. The software comes on CD-ROM so your development system PC will need a CD-ROM drive. Run-time systems do not require a CD-ROM drive, but if they don't have one they will need a network connection to load the run-time engine and application.

System requirements

- Windows 98/2000, XP-compatible (2000 or XP Pro recommended) (Does not support Windows Vista.)

Minimum:
Pentium/Celeron 233 Mhz
32MB RAM

Recommended:
Pentium/Celeron 333 Mhz
64 MB RAM or greater

- 50 MB available hard drive disk space
- CD-ROM drive
- Color monitor, with at least 640x480 resolution
- USB port

Ordering the software

Development package — includes one Development Environment license, one Run-time Engine license, one key that supports development or runtime, and all drivers.

Run-time package — includes one run-time engine license, one run-time key, and all drivers.

You need to purchase one Development Package for each PC used for application development.

If the PC used in your run-time application is not your development PC, you also need to purchase a Runtime Package for the HMI PC.

Hardware key — The hardware key must be connected to a USB port for the software to run.

Defining the software pieces

Development environment — is used to develop and debug the control application program (like ***Direct***SOFT in the case of PLCs). You can use the Development Software on one PC to create many different projects which can run on many Runtime Engines.

Run-time engine — is like the firmware in the CPU of a PLC. This software will run the application for your process.

Part Number	Price	Description
PC-LKD-DEVUPG (See description below)	<--->	Lookout***Direct*** Development package upgrade
PC-LKD-RTEUPG (See description below)	<--->	Lookout***Direct*** Runtime package upgrade
PC-DL-PLUS	<--->	***Direct***LOGIC Plus Driver Object for National Instruments Lookout Software. Allows for connection from Lookout to the ***Direct***LOGIC line of PLCs

PC-LKD-DEVUPG — LookoutDirect Version 4.5 Development Package upgrade. Upgrade development package for any LookoutDirect 3.8.x to Version 4.51 or higher. Includes software on CD-ROM and manual.

PC-LKD-RTEUPG — LookoutDirect Version 4.5 Runtime Package upgrade. Upgrade runtime package for any LookoutDirect 3.8.x to Version 4.5 or higher. Includes software on CD-ROM and manual.

This is a legacy product. We do not recommend it for new installations. Limited availability

NEW! AutomationDirect's HMI/SCADA Software for PC-based visualization

POINT OF VIEW

Save Time

View your process from your desk or web-enabled mobile phone using a standard browser (Internet/intranet including XML support)

Save Money

Develop once and deploy on Windows XP, Vista, 7, 8, and Windows Server 2003, 2008, 2012

Clear Information

Multi-language (UNICODE) so operators understand immediately

Fix Problems Fast

Understand alarms quickly, visually on-screen, or via E-mail, PDA, mobile phones or web browsers

Reduce Downtime

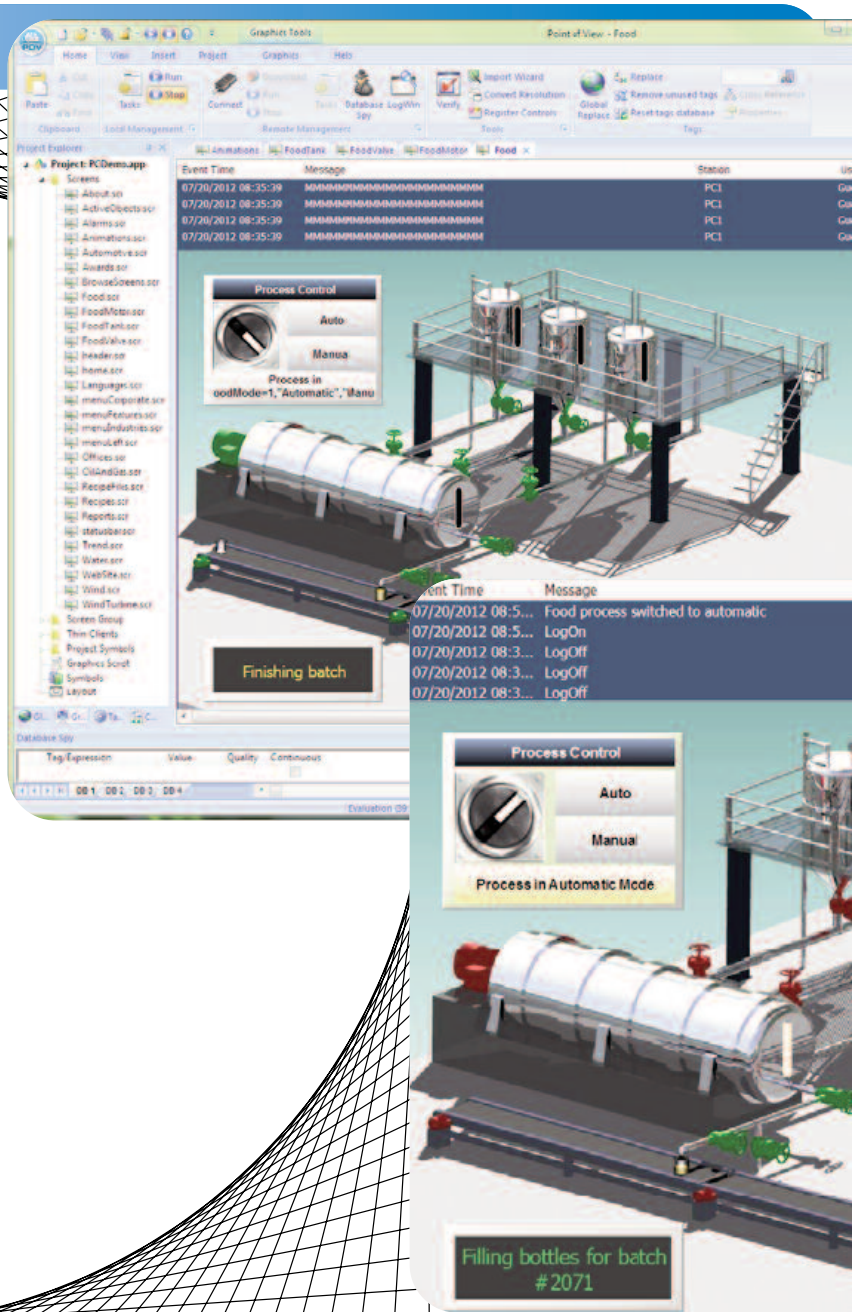
Use open technologies (ActiveX, .NET) to visualize documentation, repair videos or audio messages

Enterprise Integration

Easily tie into ERP and "back-office" systems using built-in relational database connectivity

Flexibility

Contains 18 built-in drivers for connection to the most popular industrial controllers: Productivity3000, DirectLogic, Allen Bradley, Omron, Siemens, GE and Mitsubishi. Also includes a driver for Modbus Communication.



Design Tools

Graphic and Design tools to save you development time

- Creates sophisticated interfaces with point and click, drag and drop ease
- Imports graphics from more than 15 different formats for enhanced and realistic screens
- Contains full-featured screen objects and dynamics with customizable object properties, such as bar graphs, color, resizing, blinking, animation, scale, fill, positioning, rotation, commands, hyperlinks, combo-boxes, and text input/output
- Easy application development, and screen and object re-usability
- Uses an extensive symbol library to simplify development

Thin Clients

3 different thin clients, remotely view information anywhere

AutomationDirect's Point of View software supports 3 types of remote application viewers: a dedicated viewer for plant-floor operations, where navigation must be restricted to specific HMI/SCADA applications; a Microsoft Internet Explorer®-based browser that enables full access to any authorized IP address or application and a Studio Mobile Access viewer that works with any browser. Up to 48 simultaneous viewing clients of each type are supported.

Alarms

- Send alarms to various utilities such as screen, e-mail, and Web browser, and archive to the printer; allows users to store notes after acknowledgement of alarm(s).
- Provides free format alarm messages, uses secondary search keys, and accesses through groups or tags

Redundancy

Support for redundant servers or databases

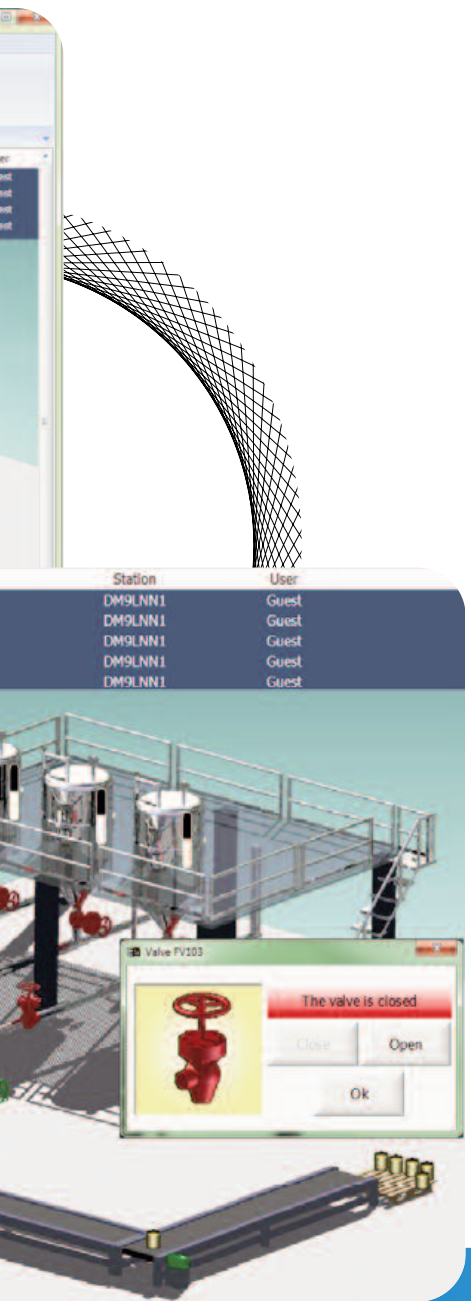
Redundancy is supported several ways. AutomationDirect's Point of View software publishes screens as web pages either to Internet Explorer or Secure Viewer. The screen graphics are published as HTML pages via a "web server". The data is published via a "data server". Point of View supports redundant Web or data servers.

Point of View also allows connections to databases. Databases can be used to log data from Alarms, Events or Trends. The "Grid" object can interact with databases directly.

Trends

Keeps track of process behavior online or through historical trending and sends information across a network for monitoring on screens or Web browsers.

. . . and much more



Point of View Overview

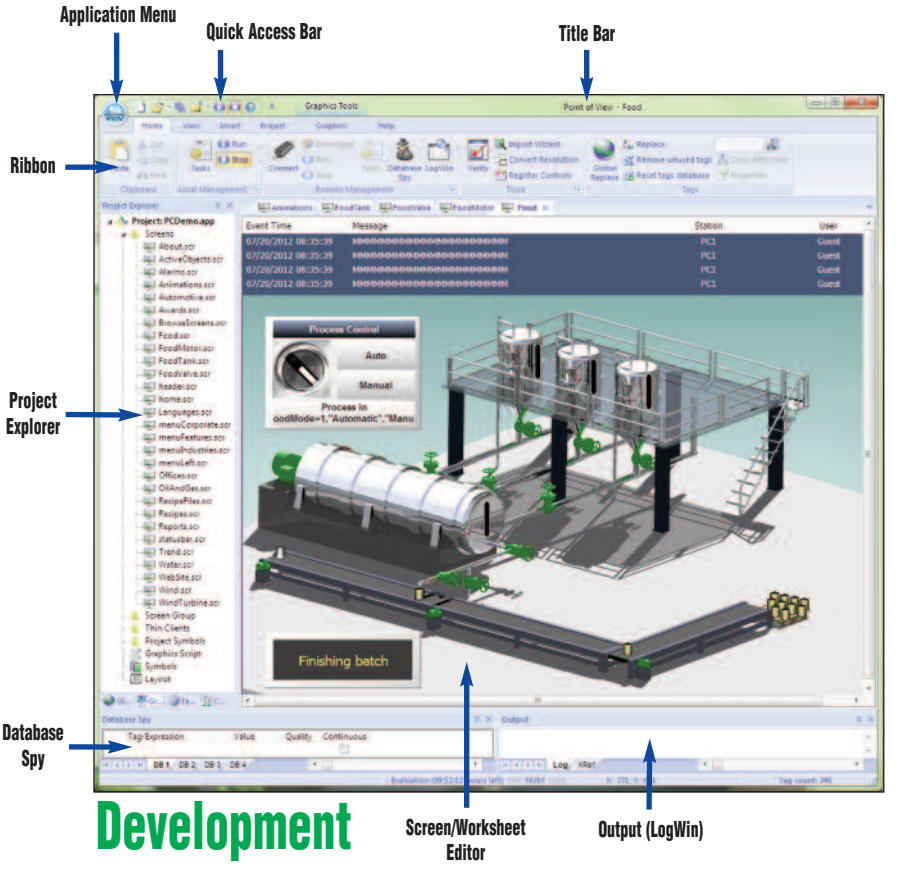
Overview

Point of View is powerful software for developing HMI, SCADA, and OEE/Dashboard projects that can be deployed anywhere.

Each project consists of:

- A project tag database to manage all run-time data, including both internal variables and scanned I/O
- Configurable drivers to communicate in real-time with programmable logic controllers (PLCs), remote I/O devices, and other data acquisition equipment
- Animated HMI screens and OEE dashboards
- Optional modules such as alarms, events, trends, recipes, reports, scriptable logic, schedulers, a security system, and a complete database interface

After you develop your project, you can either run it locally on your development workstation or download it to a remote workstation and run it there using Point of View runtime software. The workstation processes I/O data from connected devices according to your project parameters and then reacts to, displays, and/or saves the data.



Internal Structure

The Point of View project runtime runs on a Windows-based computer and consists of the following modules or threads (program elements that can execute independently of other program elements):

- Background Task (a supervisory task)
- Database Spy (debugging tool)
- DDE Client
- DDE Server
- LogWin (debugging tool)
- Driver Runtime
- OPC Client
- OPC Server
- ODBC Runtime
- TCP/IP Client
- TCP/IP Server
- Viewer

These modules do not communicate directly with each other. Instead, the tag database is used to manage the flow of data between modules. It also stores all tag values and any properties associated with each tag (such as alarm conditioning, timestamp, etc). The tag database is the "heart" of Point of View.

Point of View Overview

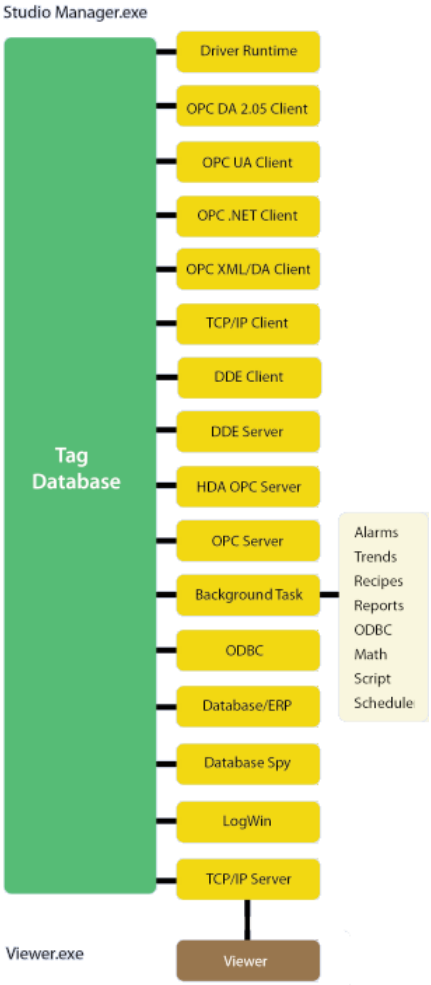
Data Flow

When the driver reads a new value from the PLC, the driver updates the tag associated with this value in the tag database. Then, if this new information must display on the project screen, the tag database sends the new tag value to the Viewer task, and the Viewer updates the screen.

Driver reads new value from PLC
Driver
Driver writes new value into the Tag Database
Tag Database
Tag Database sends new value to Viewer
Viewer
Viewer updates the screen

Note that the driver does not send new tag values directly to the Viewer. In addition, there is no pooling between tasks — the tag database receives the updated information and immediately forwards it to all runtime tasks requiring that information.

The architecture of Point of View significantly improves the internal data flow performance and makes it easy for you to add new internal tasks. Even though each task works independently, it can access information from any other task through the tag database.



Thread Executing

Point of View is composed of modules that must be executed simultaneously. Based on the multi-tasking concept, each runtime module (Viewer, Driver, and so forth) is a thread and the operating system switches from one thread to another automatically.

When you execute a runtime project, the Studio Manager.exe process starts the Tags database and all of the runtime modules configured for the project. The operating system continuously scans all currently active threads, and executes the threads according to their priority value — executing the higher-priority threads first.

System Architecture

The architecture of your finished Point of View project depends on which components you install, where you install them, and how you connect them to each other.

In most cases, you should first install the full Point of View software on your primary workstation. Not only does it set up the project development environment on your computer, it also unpacks the rest of the components so that they can be installed on other computers.

The table, shown below, displays the various software components, functions and platforms required.

Component	Functions	Platforms
Point of View	• Project development • Tag integration • Remote management • Project runtime server • Project runtime client	• Windows • Windows Server
Mobile Access Runtime	Enables your project runtime server to deliver HTML5-enhanced project screens to tablets and smartphones	Microsoft IIS for Windows
Thin Client (a.k.a. Secure Viewer)	Web thin client (standalone application)	• Windows • Windows Server
ISSymbol	Web thin client (browser plug-in)	Internet Explorer for Windows

Point of View Features

Point of View Features			
Alarms	In addition to all the alarm functions you'd expect, Point of View also sends alarms using multi-media formats such as PDF. Use remote notification to have alarms sent to your inbox, a printer, or a smartphone. Alarms are real-time and historical; log data in binary format or to any database.	***Recipes***	Save time and maintain consistency by automating part parameters or production quantities with any triggering event.
Animation	Point of View gives you great command over graphics. Paste images, and even rotate them dynamically. Fill bar graphs with color, or adjust the scale of objects with easy-to-use configuration. Other animations include "command" (for touch, keyboard and mouse interaction), hyperlink, text data link, color, resize (independent height and width), position, and rotation (with custom rotation point).	***Redundancy***	For critical applications where data is vital, Point of View supports web server, database and overall system redundancy.
Database	Connect to any SQL database (MS SQL, MySQL, Sybase, Oracle), or MS Access or Excel, and ERP/MES systems (including SAP). Flexible enough to have a built in interface without the need to know SQL (for trends, alarms/events, grid and other objects), or use any SQL statement you need anywhere you need it.	***Scalable***	Develop once and deploy everywhere. Take an application created for Windows XP and deploy it on any supported Microsoft operating system, including Windows 7, Windows 8, and Server editions.
Drivers	Contains 18 built-in drivers for the following PLCs: Productivity3000, DirectLogic, Allen Bradley, Omron, Siemens, GE and Mitsubishi. Also includes a driver for Modbus communication. See the Point of View Driver List on the following page.	***Scheduler***	Schedule custom tag changes on date/time, frequency, or any trigger. Use this for simulation, to trigger reports or other functionality at a particular time of day, or even to trigger driver worksheets to read/write at a scan rate you choose.
Email	Send email using SMTP to desktop, email enabled phone, or any email enabled device. Get real-time information on alarms, process values, and other events. Supports SSL encryption allowing the use of third-party providers such as Gmail.	***Scripting***	Two powerful scripting languages are supported. Use built-in POV functions or use standard VBScript to take advantage of widely available resources. Both can be used simultaneously to give you the functionality you need.
Events	POV offers traceability for operator initiated actions or internal system activity. Log events such as security system changes (user logon or off), screen open/close, recipe/report operations, custom messages and system warnings. Also any tag value changes including custom messages.	***Security***	Includes support for group and user accounts, e-signatures, and traceability, as well as support for the ADAM Server, in addition to standard LDAP Servers. Integrate your project to the Active Directory (Users and Groups).
FDA Traceability	Built-in functionality creates 21 CFR part 11 compliant projects with traceability and e-signatures. These features are often used for pharmaceutical and food applications, but also for any application where traceability is a must.	***SSL Support for Emails***	Native support for Secure Socket Layer (SSL), makes it easy and secure to send emails from Point of View using third-party tools such as Gmail.
FTP	Automatically upload or download files during runtime to/from remote storage locations using FTP protocol and flexible scripting functions. Configure FTP via scripting or the included configuration interface.	***Standards***	Take advantage of common industry standards to develop applications that are compatible with any format. TCP/IP, .Net, ActiveX, OPC (client and server), ADO/ODBC, COM/DCOM, OLE, DDE, XML, SOAP, and HTML are supported.
Graphics and Design Tools	Create powerful screens to meet any application need using the tools in the graphic interface. Combine built-in objects to create any functionality required. Store graphics in the library for future use, or easily make project across a product line share a consistent "look and feel".	***SNMP***	Easily configure managed networked devices on IP networks (such as switches and routers) using incorporated SNMP configuration commands and an easy-to-use configuration interface.
Historical Performance	Optimized trend history module. Designed to load millions of values from SQL relational databases with high performance, with built-in data decimation in the Trend Control. Easy-to-use tools provide quick access to Statistical Process Control (SPC) values without any need for programming.	***Symbols***	Included library features push buttons, pilot lights, tanks, sliders, meters, motors, pipes, valves and other common objects. Use the included symbols in your project, modify existing symbols to suit your needs, or create your own from scratch. Plus support for third-party symbol libraries and graphic tools.

Point of View Features

Point of View Features			
Intellectual Property Protection	Screens, documents, scripts and even math worksheets can be individually password protected. This prevents unauthorized viewing or editing of your corporate custom functionality. Protect the entire project with just a few mouse clicks.	***Tag Database***	Object oriented database with boolean, integer, real, strings, arrays, classes (structures), indirect tags and included system tags.
Multi-Language	Develop your application in one of many development languages, including English, Portuguese, German, and French.	***Thin Clients***	Remotely view screens as web pages using Internet Explorer web browser, or POV Secure Viewer. Use SMA (Studio Mobile Access) to monitor or access process values and alarms with remote devices such as tablets and mobile phones. Enhanced SMA offers data in easy-to-read widgets that can be viewed on any WebKit (HTML5) based web browser found on iPads, and Android phones and tablets.
.NET and ActiveX	Use third-party controls to enhance your project. POV is a container for ActiveX and .NET controls. Add functionality such as browsers, media players, charting, and other tools that support the ActiveX or .NET interface standards.	***Trends***	Real-time and Historical trends are supported. Log data in binary format or to any database locally and remotely. Color or fill trends with graphic elements to enhance clarity of data. Date/Time based or numeric (X/Y plot) trends give you the flexibility to display information that best suits your application.
OPC	Drivers for most major brands of PLCs are built in, but any OPC server may optionally be used. Supports OPC DA (Server/Client), OPC HDA(Server), UA (Client) and OPC .NET 3.0 (Client).	***Troubleshooting***	Quickly debug and verify a project using local and remote tools for troubleshooting, including status fields, DatabaseSpy and LogWin. Capture screen open and close times, see communications in real-time, and messages related to OPC, recipes/reports, security, database errors and even custom messages.
PDF Export	Send alarms, reports, or any file (including .doc or .txt) to a production supervisor, quality manager, or maintenance staff using the included PDF writer.		

Point of View Driver List	
DLL	***Description***
ABCIP	Allen Bradley Ethernet CIP Protocol (CE) [v11.0]
ABENI	Allen Bradley, AB-1761-NET-ENI Gateway interface (CE) [v1.11]
ABKE	Allen Bradley, DF1 Protocol (PLC2, PLC5 and SLC500) Families (CE) [v10.4]
ABTCP	Allen Bradley Ethernet, DF1 Protocol (PLC2, PLC5 and SLC500) Families (CE) [v10.6]
FANUC	GE FANUC, SNP Serial Protocol - Series 90 / 90/30 CPU 341 (CE) [v10.4]
KOYO	DirectLogic Koyo, CCM/ECOM protocol (DL240/DL250+H2-ENET)(CE) [v1.14]
MELSE	MELSE, Mitsubishi - MELSEC Protocol (CE) [v10.3]
MITSU	MITSUBISHI Protocol, FX Series (CE) [v10.5]
MODBU	MODBUS Protocol RTU/ASCII (CE) [v10.6]
MODSL	Protocol Modbus Slave (ASCII and RTU)(Serial and TCP/IP) (CE) [2.7]
MOTCP	MODBUS Protocol RTU via TCP/IP (CE) [v10.7]
OMETH	OMRON, OMPLC Protocol - FINS communication / CS1 and CV (CE) [v10.5]
OMPLC	OMRON, Host Link Protocol - C Series/Sysmac Way/Host Link Units (CE) [v3.01]
PAC3K	AutomationDirect PAC Devices (CE) [v1.1]
SIEME	SIEMENS, S7 PLC communicating via Serial interface (CE) [v10.8]
SIETH	SIEMENS, S7 PLC communicating via an Industrial Ethernet interface (CE) [v10.8]
SIPPI	SIEMENS, S7-200 PLC communicating via PPI interface (CE) [v10.8]
SRTP	GE Fanuc, SRTP TCP/IP Protocol (CE) [v10.2]
SSTDH	SST DHP Protocol, Interface Cards for Allen Bradley [v1.8]

Point of View System Requirements

System Requirements

Minimum:

To install and run the full Point of View software, you must have:

- A Windows-compatible computer with a standard keyboard, pointer input (e.g., mouse, trackpad, or touchscreen), and SVGA-minimum display
- A Windows or Windows Server operating system that is currently supported by Microsoft, which at this time includes:
  - Microsoft Windows XP Service Pack 3
  - Microsoft Windows Vista Service Pack 2
  - Microsoft Windows 7 Service Pack 1
  - Microsoft Windows 8
  - Microsoft Windows Server 2003 Service Pack 2
  - Microsoft Windows Server 2008 Service Pack 2
  - Microsoft Windows Server 2008 R2 Service Pack 1
  - Microsoft Windows Server 2012
- Microsoft .NET Framework 3.5.1
- Microsoft Internet Explorer 6.0 or later
- 2 GB free hard drive space or non-volatile memory
- An Ethernet or Wi-Fi network adapter, for TCP/IP networking or Serial COM ports and adapters to be used for direct communication with PLCs and other devices
- A USB port, to be used with hardkey licensing

Recommended:

We recommend the Home Premium, Professional, Enterprise, and Ultimate editions of Windows, because they include Microsoft Internet Information Services (IIS) as a pre-installed feature that can be turned on. IIS is used to make your projects accessible to web thin clients and mobile devices. We do not recommend the Starter and Home Basic editions because they do not include IIS, but you can still use them if you do not plan to use those features.

The following items are optional but recommended:

- A DVD-ROM drive, to install the software from disc
- Microsoft IIS installed and turned on, to make your projects accessible to mobile devices and thin clients

Ordering the Software

Complete package — includes one Development Environment license, one Run-time Engine license and all drivers. Hardware Key (PV-HWKEY) sold separately.

Development package — includes one Development Environment license and all drivers. Hardware Key (PV-HWKEY) sold separately.

Run-time package — includes one Run-time Engine license and all drivers. Hardware Key (PV-HWKEY) sold separately.

Notes:

- *Point of View limits the maximum number of different drivers configured simultaneously in the same application. Each driver implements a protocol and uses one physical port of the station where the application runs. For example, in order to exchange data with 10 PLCs that support the same protocol (e.g.: Modbus over TCP/IP), you just need one driver (one protocol and one Ethernet port). However, in order to exchange data with two PLCs via two different serial ports of the computer, you need two communication drivers, even if both PLCs support the same protocol. If more drivers are required, please contact AutomationDirect.com.*
  - *500 tag count = 1 communication driver supported*
  - *1000 tag count = 3 communication drivers supported*
  - *5000 tag count = 10 communication drivers supported*
- *You need to purchase one Development Package for each PC used for application development.*
- *If the PC used in your run-time application is not your development PC, you also need to purchase a Runtime Package for the HMI PC.*
- *Point of View is available for ordering online only, using the POV configuration tool to ensure selection of all the needed components.*

Part Number	Description	ADC Suggested List Price
Complete Package		
PV-500	Point of View Development/Runtime 500 Tags. Requires PV-HWKEY.	<--->
PV-1000	Point of View Development/Runtime 1000 Tags. Requires PV-HWKEY.	<--->
PV-5000	Point of View Development/Runtime 5000 Tags. Requires PV-HWKEY.	<--->
PV-1000-UPG	Point of View Upgrade 500 to 1000 Tags Development/Runtime.	<--->
PV-5000-UPG	Point of View Upgrade 1000 to 5000 Tags Development/Runtime.	<--->
PV-500-REV	Point of View Major Revision Update.	<--->
PV-1000-REV	Point of View Major Revision Update.	<--->
PV-5000-REV	Point of View Major Revision Update.	<--->
Development Only		
PV-500-DEV	Point of View Development 500 Tags. Requires PV-HWKEY.	<--->
PV-1000-DEV	Point of View Development 1000 Tags. Requires PV-HWKEY.	<--->
PV-5000-DEV	Point of View Development 5000 Tags. Requires PV-HWKEY.	<--->
PV-1000DEV-UPG	Point of View Upgrade 500 to 1000 Tags Development Only.	<--->
PV-5000DEV-UPG	Point of View Upgrade 1000 to 5000 Tags Development Only.	<--->
PV-500DEV-REV	Point of View Major Revision Update.	<--->
PV-1000DEV-REV	Point of View Major Revision Update.	<--->
PV-5000DEV-REV	Point of View Major Revision Update.	<--->
Runtime Only		
PV-500-RT	Point of View Runtime 500 Tags. Requires PV-HWKEY.	<--->
PV-1000-RT	Point of View Runtime 1000 Tags. Requires PV-HWKEY.	<--->
PV-5000-RT	Point of View Runtime 5000 Tags. Requires PV-HWKEY.	<--->
PV-1000RT-UPG	Point of View Upgrade 500 to 1000 Tags Runtime Only.	<--->
PV-5000RT-UPG	Point of View Upgrade 1000 to 5000 Tags Runtime Only.	<--->
PV-500RT-REV	Point of View Major Revision Update.	<--->
PV-1000RT-REV	Point of View Major Revision Update.	<--->
PV-5000RT-REV	Point of View Major Revision Update.	<--->

Point of View System Requirements

Part Number	Description	ADC Suggested List Price
Web Sessions		
PV-WEB-2	Web Thin Client Supports 2 Point of View Connections.	<--->
PV-WEB-4	Web Thin Client Supports 4 Point of View Connections.	<--->
PV-WEB-8	Web Thin Client Supports 8 Point of View Connections.	<--->
PV-WEB-16	Web Thin Client Supports 16 Point of View Connections.	<--->
PV-WEB4-UPG	Web Thin Client Upgrade 2 to 4 Point of View Connections.	<--->
PV-WEB8-UPG	Web Thin Client Upgrade 4 to 8 Point of View Connections.	<--->
PV-WEB16-UPG	Web Thin Client Upgrade 8 to 16 Point of View Connections.	<--->
Secure Viewer Sessions		
PV-SV-2	Secure Viewer Thin Client Supports 2 Point of View Connections.	<--->
PV-SV-4	Secure Viewer Thin Client Supports 4 Point of View Connections.	<--->
PV-SV-8	Secure Viewer Thin Client Supports 8 Point of View Connections.	<--->
PV-SV-16	Secure Viewer Thin Client Supports 16 Point of View Connections.	<--->
PV-SV4-UPG	Secure Viewer Thin Client Upgrade 2 to 4 Point of View Connections.	<--->
PV-SV8-UPG	Secure Viewer Thin Client Upgrade 4 to 8 Point of View Connections.	<--->
PV-SV16-UPG	Secure Viewer Thin Client Upgrade 8 to 16 Point of View Connections.	<--->
Mobile Sessions		
PV-MOBILE-2	Mobile Thin Client Supports 2 Point of View Connections.	<--->
PV-MOBILE-4	Mobile Thin Client Supports 4 Point of View Connections.	<--->
PV-MOBILE-8	Mobile Thin Client Supports 8 Point of View Connections.	<--->
PV-MOBILE-16	Mobile Thin Client Supports 16 Point of View Connections.	<--->
PV-MOBILE4-UPG	Mobile Thin Client Upgrade 2 to 4 Point of View Connections.	<--->
PV-MOBILE8-UPG	Mobile Thin Client Upgrade 4 to 8 Point of View Connections.	<--->
PV-MOBILE16-UPG	Mobile Thin Client Upgrade 8 to 16 Point of View Connections.	<--->
Miscellaneous		
PV-HWKEY	Point of View USB Hardware Key.	<--->
PV-HWKEY-R	Point of View Replacement USB Hardware Key.	<--->
PV-ADCDRV-M	Point of View Quick Start Guide for AutomationDirect Drivers.	<--->
PV-SWREF-M	Point of View Software Reference Guide.	<--->

ATLAS™ Industrial Grade LCD Monitors
starting at $995.00!

atlas™

www.automationdirect.com BUY ONLINE

ORDER TODAY, GET IT TOMORROW

money-back 30 day guarantee

Atlas™ Industrial Grade LCD Monitors

These heavy duty PC monitors offer superb quality at a competitive price. Their compact size and very thin panel mounted depth (less than 2.75") allows them to be used in size restricted projects. And the hazardous locations listing makes them ideal for installation in harsh environments found in many factory automation applications. All sizes are available in non-touch or with a 5-wire analog resistive touchscreens. There are currently three sizes, 15", 17", and 19", in this series.

The ATLAS series includes 15" XGA, 17" SXGA, and 19" SXGA LCD monitors. All models come standard with 100-240 VAC input power supplies and have NEMA 4/4X/12 panel-mountable front bezels. All units provide Analog Video (VGA) connections, and 5-wire analog resistive touchscreen "T" models supply connection via either USB or RS-232. The ATM1700 and ATM1900 include Digital Video Inputs (DVI) as well. The entire series is UL/cUL listed, complies with European CE and RoHS requirements, and is UL approved for Class I Division 2, Class II Division 2 and Class III hazardous locations.

UL Approved for Class I Division 2 and Class 3 Hazardous Locations

Integrated Power Supply

Features

- **Optional non-touch or 5-wire analog resistive touch screen available**
- **UL 508 and ANSI/ISA 12.12.01 listed for Hazardous Locations: Class I, Division 2, Groups A, B, C, D; Class II, Division 2, Groups F and G and Class III.**
- **NEMA 4/4X/12 front bezel**
- **RoHS compliant**
- **Integral 100-240 VAC power supply**
- **RS-232 and USB support for touch screen models**
- **Simplified installation with no studs**
- **VESA compliant - all modes up to SXGA, 16 million colors**
- **2-year warranty**

ATM1500

$995.00

ATM1500T (touch)

$1,195.00

ATM1500 - 15"

- 15" color TFT LCD display
- XGA, 1024 x 768 native resolution
- 16 million colors
- 40,000 hrs backlight Life
- Integral 100-240 VAC power supply
- Simplified installation with no studs
- Thin design - only 2.4" behind bezel
- Accepts analog 15-pin video input

ATM1700

$1,405.00

ATM1700T (touch)

$1,605.00

ATM1700 - 17"

- 17" color TFT LCD display
- SXGA, 1280 x 1024 native resolution
- 16 million colors
- 50,000 hrs backlight life
- Integral 100-240 VAC power supply
- Simplified installation with no studs
- Thin design - only 2.6" behind bezel
- (DVI) Digital Video Inputs
- Accepts analog 15-pin video input

ATM1900

$1,705.00

ATM1900T (touch)

$1,910.00

ATM1900 - 19"

- 19" color TFT LCD display
- SXGA, 1280 x 1024 native resolution
- 16 million colors
- 40,000 hrs backlight life
- Integral 100-240 VAC power supply
- Simplified installation with no studs
- Thin design - only 2.7" behind bezel
- (DVI) Digital Video Inputs
- Accepts analog 15-pin video input

Quality Industrial Monitors at a Great Price!

15" ATLAS	17" ATLAS	19" ATLAS
<---> ATM1500	<---> ATM1700	<---> ATM1900
<---> ATM1500T	<---> ATM1700T	<---> ATM1900T

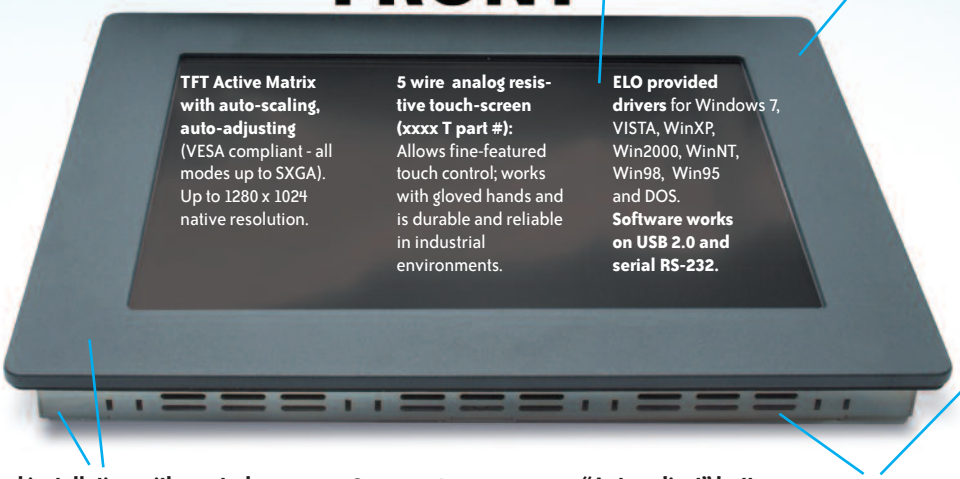
"T" models have resistive touchscreens

UL, cUL, CE approved NEMA 4/4X/12, IP65 FCC 47 CFR, Part 15, Class A Bezel Construction

Bezel Construction: 0.25" Machined Aluminum with a recessed gasket pocket to keep moisture out and powder coated treated with an attractive dark gray textured powder coating

Impact Window: .125" Lexan(Polycarbonate) with a clear hard coat

FRONT


TFT Active Matrix with auto-scaling, auto-adjusting (VESA compliant - all modes up to SXGA). Up to 1280 x 1024 native resolution.
5 wire analog resistive touch-screen (xxxx T part #): Allows fine-featured touch control; works with gloved hands and is durable and reliable in industrial environments.
ELO provided drivers for Windows 7, VISTA, WinXP, Win2000, WinNT, Win98, Win95 and DOS. **Software works on USB 2.0 and serial RS-232.**

SIDE

Compact size and very thin panel mount depth of less than 2.75" saves enclosure space

Recessed cable connections conserve panel space

Simplified installation with no studs, housed in a heavy duty steel chassis with a powder coated machined aluminum bezel *(mounting clips included)*

Screen setup via rear keypad prevents tampering

"Auto-adjust" button on back panel keypad for easy display optimization

Ventilation located on all sides to reduce heat build-up 0 to 50 °C (32 to 122 °F)

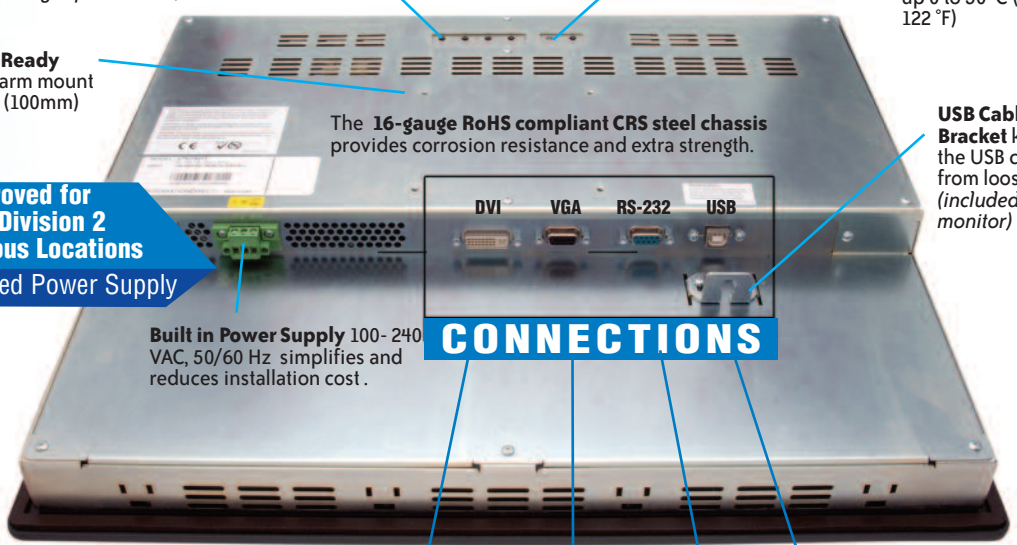
VESA Ready VESA arm mount ready (100mm)

The **16-gauge RoHS compliant CRS steel chassis** provides corrosion resistance and extra strength.

USB Cable Bracket keeps the USB cable from loosening *(included with monitor)*

UL Approved for Class I Division 2 Hazardous Locations
Integrated Power Supply

Built in Power Supply 100- 240 VAC, 50/60 Hz simplifies and reduces installation cost .



BACK

DVI On 17" and 19" monitors only

VGA

RS-232 Touch models only

USB Touch models only

Full selection of cables in various lengths is located on page 12-25

For detailed specifications, refer to the Specification Charts in the ATLAS Technical section of the Catalog

Atlas Industrial Flat Panel PC Monitors

LCD Monitor Specifications

LCD Monitor Specifications						
Part Numbers	**ATM1500**	**ATM1500T**	**ATM1700**	**ATM1700T**	**ATM1900**	**ATM1900T**
Nominal Size	**15”**		**17”**		**19”**	
Price	<--->	<--->	<--->	<--->	<--->	<--->
DISPLAY						
Display Type	TFT Active Matrix					
Display Diagonal Size	14.96” (380 mm)		17.04” (432.8 mm)		18.97” (481.8 mm)	
Display Size (Active Area H x W)	8.98" x 11.97" (228.1 mm x 304.0 mm)		10.64" x 13.30" (270.3 mm x 337.8 mm)		11.85" x 14.82" (301.0 mm x 376.4 mm)	
Native Resolution	XGA, 1024 x 768		SXGA, 1280 x 1024			
VESA Modes Supported	Up to 1280 x 1024 @75Hz					
Displayable Colors	16M					
Brightness, Typical	250 Nit		300 Nit		270 Nit	
Contrast Ratio, Typical	800:1		1000:1		2000:1	
Horizontal/Vertical View Angle, CR>5, Typical	150°/145°		170°/170°		178°/178°	
Backlight Life	50,000 hrs, Minimum					
Display Input Signal	Analog 15-Pin D-Sub, DVI-D					
Impact Window	0.125” (3.2 mm) Lexan (polycarbonate), clear hard coat					
PHYSICAL						
Overall Monitor Dimensions (H x W x D)	12.80" x 15.80" x 2.65" (325.1 mm x 401.3 mm x 67.3 mm)		14.48" x 17.14" x 2.85" (367.8 mm x 435.4 mm x 72.4 mm)		15.70" x 18.66" x 2.95" (398.8 mm x 474.0 mm x 74.9 mm)	
Cutout Dimensions (H x W)	12.00" x 15.00" (304.8 mm x 381.0 mm)		13.70" x 16.35" (348.0 mm x 415.3 mm)		14.90" x 17.75" (378.5 mm x 450.9 mm)	
Chassis Depth	2.4” (61.0 mm)		2.6” (66.0 mm)		2.7” (68.6 mm)	
Bezel Construction	0.25” (6.4 mm) Machined Aluminum with recessed gasket pocket					
Bezel Finish	Dark Gray Textured Powder Coated					
Chassis Construction	16 Gauge RoHS Compliant CRS Steel					
Weight	14.0 lbs (6.4 kg)		18.5 lbs (8.4 kg)		21 lbs (9.5 kg)	
Shipping Weight	19 lbs (8.6 kg)		23.5 lbs (10.7 kg)		26 lbs (11.8 kg)	
ELECTRICAL						
AC Input Voltage	100 - 240 VAC, 50/60 Hz					
AC Input Current	0.5A Maximum		1A Maximum			
Input Power	≤ 25W		≤ 30W		≤ 35 W	
ENVIRONMENTAL						
Operating Temperature	0 to 50 °C (32 to 122 °F)					
Storage Temperature	-20 to 60 °C (-4 to 140 °F)					
Operating and Storage Humidity	20% to 80% RH, noncondensing					
Operating Shock	15g peak acceleration, 11msec					
Operating Vibration 5-2000 Hz	0.006" peak to peak, 1g max					
Operating Altitude	Sea level - 10,000 feet					
Storage Altitude	Sea level - 40,000 feet					
AGENCY						
Front Panel NEMA Rating	NEMA 4/4X/12, IP65					
FCC	47 CFR, Part 15, Class A					
EU CE Marking Compliance	CE, EN 55022: Class A, EN 61000-3-2: Class A, EN 61000-3-3, EN 61000-6-2, IEC 60950-1, RoHS compliant					
Safety Agency Approvals	UL 508 Listed (file #E157382), ANSI/ISA 12.12.01-2012 Listed* (file #E200031), cUL Listed CSA C22.2, #142, CSA C22.2, #143*					

**** Suitable for use in Class I, Division 2, Groups A, B, C and D, Class II, Division 2, Groups F and G, Class III Hazardous Locations or Non-Hazardous locations only.***

For use on a flat surface of a type 1, 4, 4X or 12 enclosure with provisions for Class I Division 2 wiring methods

Temperature Code: T5

Atlas Industrial Flat Panel PC Monitors

LCD Monitor Specifications (cont'd)

Touch Screen Specifications			
Part Numbers	**ATM1500T**	**ATM1700T**	**ATM1900T**
TOUCH SCREEN (Optional)			
Touch Screen Technology	5- Wire Analog Resistive		
Interface	USB 1.1 and Serial RS-232		
Resolution	4096 x 4096		
Positional Accuracy (Maximum Error)	0.18" (4.6 mm)		0.19" (4.8 mm)
Positional Accuracy (Standard Deviation of Error)	<0.08" (<2.0 mm)		
Screen Finish	Anti-Reflective, Surface Durability - 3H per ASTM D3363		
Chemical Resistance	Acetone, Methylene Chloride, MEK, Isopropyl Alcohol, Hexane, Turpentine, Mineral Spirits, Unleaded gasoline, Diesel fuel, Motor oil, Transmission fluid, Antifreeze, vinegar, ammonia-based glass cleaner.		
Electrostatic Protection	Per EN 61000-4-2, 1995, Withstands 20 discharges up to 15 kV		
Expected Life	>35,000,000 Activations		

Supported PC Video Modes

Video Modes						
Mode	**Dot Clock (MHz)**	**Horizontal Freq (KHZ)**	**Vertical Freq (Hz)**	**H Sync Polarity**	**V Sync Polarity**	**Display Modes for Best Image Quality**
640 x 350 @ 70Hz	25.144	31.430	70.000	P	N	
640 x 400 @ 70Hz	28.287	31.430	70.000	N	P	
720 x 400 @ 70Hz	28.287	31.430	70.000	N	P	
640 x 480 @ 60Hz	25.175	31.469	59.940	N	N	
640 x 480 @ 72Hz	31.500	37.861	59.940	N	N	
640 x 480 @ 75Hz	31.500	37.500	75.000	N	N	
800 x 600 @ 56HZ	36.000	35.156	56.250	P	P	
800 x 600 @ 60Hz	40.000	37.879	60.317	P	P	
800 x 600 @ 72Hz	50.000	48.077	72.188	P	P	
800 x 600 @ 75Hz	49.500	46.875	75.000	P	P	
1024 x 768 @ 60Hz	65.000	48.363	60.005	N	N	ATM1500/ATM1500T
1024 x 768 @ 70Hz	75.000	56.476	70.070	N	P	ATM1500/ATM1500T
1024 x 768 @ 75Hz	78.750	60.023	75.030	P	P	ATM1500/ATM1500T
1280 x 1024 @ 60Hz	108.000	63.981	60.020	P	P	ATM1700/ATM1700T & ATM1900/ATM1900T
1280 x 1024 @ 75Hz	135.000	79.976	75.035	P	P	ATM1700/ATM1700T & ATM1900/ATM1900T

Atlas Industrial Flat Panel PC Monitors

ATM1500/ATM1500T

The *Atlas* ATM1500/ATM1500T is a high performance 15" color TFT flat panel monitor specifically designed for harsh industrial environments including Class I Division 2, Class II Division 2 and Class III Hazardous Locations. The ATM1500/ATM1500T accepts standard analog VGA or digital DVI input and can display all VESA video modes up to 1280 x 1024 at 75Hz, 800:1 contrast with 16 million colors. An optional 5-wire analog touch screen (ATM1500T) is available that offers both RS-232 and USB interface capability. The monitor is housed in a heavy duty steel chassis with a powder coated machined aluminum bezel. The monitor is certified to NEMA 4/4X/12 standards, is UL/CUL listed, meets CE requirements and is RoHS compliant. Panel mounting is simplified using convenient mounting clips instead of conventional studs. All monitors are shipped with a power input wiring receptacle, 6' VGA cable, 6' RS-232 cable (ATM1500T only), 2m USB Cable (ATM1500T only), mounting hardware, Quick Installation Guide, and CD-ROM containing Hardware User's Guide (ATM-15-USER) and touch screen driver software for Windows 98/NT/2000/XP/Vista/7.

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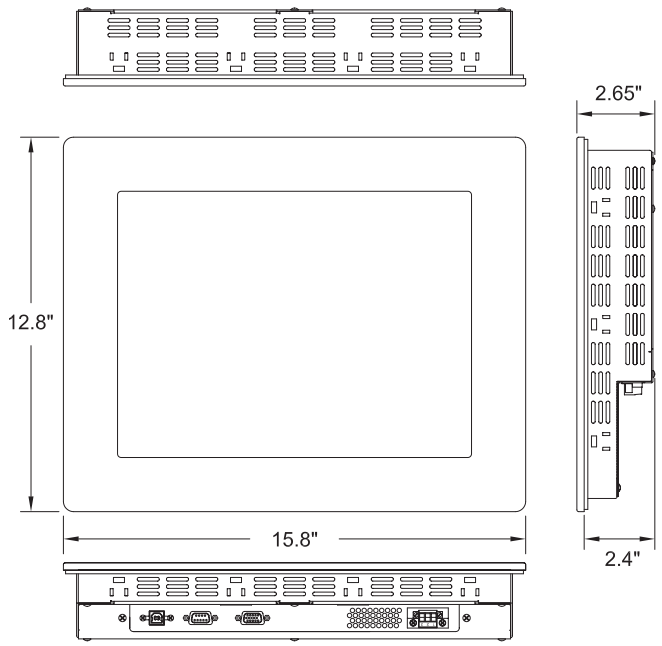
Specifications

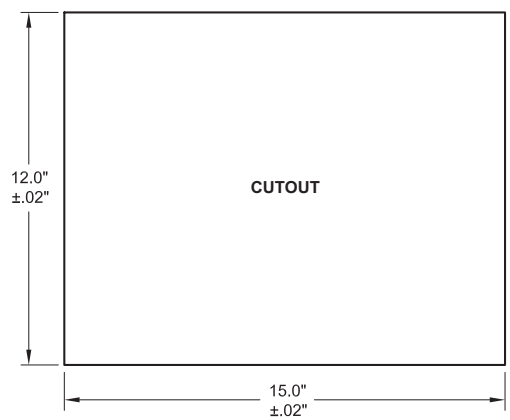
- 15" color TFT LCD display
- UL 508 and ANSI/ISA 12.12.01-2012 listed for Hazardous Locations: Class I, Division 2, Groups A, B, C, D; Class II, Division 2, Groups F and G and Class III hazardous locations when mounted in a NEMA Type 1, 4, 4X or 12 enclosure
- NEMA 4/4X/12 front bezel
- 2-year warranty
- RoHS compliant
- Integral 100-240 VAC power supply
- Simplified installation with no studs
- Thin design - only 2.4" behind bezel
- Accepts analog 15-pin Video input, digital input DVI-D
- VESA compliant - all modes up to SXGA, 16 million colors
- Optional 5-wire resistive touch screen with both RS-232 and USB interface

NOTE: Don't forget the optional cables shown on the Accessories page.

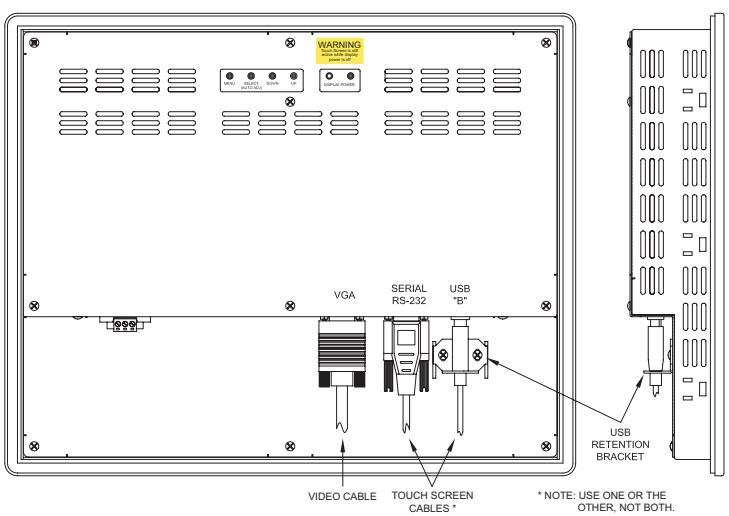
Dimensions



Mounting Cutout



Cable Connections



Atlas Industrial Flat Panel PC Monitors

ATM1700/ATM1700T

The *Atlas* ATM1700/ATM1700T is a high performance 17" color TFT flat panel monitor specifically designed for harsh industrial environments including Class I Division 2, Class II Division 2 and Class III Hazardous Locations. The ATM1700/ATM1700T accepts standard analog VGA input, or digital DVI input, and can display all VESA video modes up to 1280 x 1024 at 75Hz, 1000:1 contrast with 16 million colors. An optional 5-wire analog touch screen (ATM1700T) is available that offers both RS-232 and USB interface capability. The monitor is housed in a heavy duty steel chassis with a powder coated machined aluminum bezel. The monitor is certified to NEMA 4/4X/12 standards, is UL/CUL listed, meets CE requirements and is RoHS compliant. Panel mounting is simplified using convenient mounting clips instead of conventional studs. All monitors are shipped with a power input wiring receptacle, 6' VGA cable, 6' RS-232 cable (ATM1700T only), 2m USB Cable (ATM1700T only), mounting hardware, Quick Installation Guide, and CD-ROM containing Hardware User's Guide (ATM-17-USER) and touch screen driver software for Windows 98/NT/2000/XP/Vista/7.

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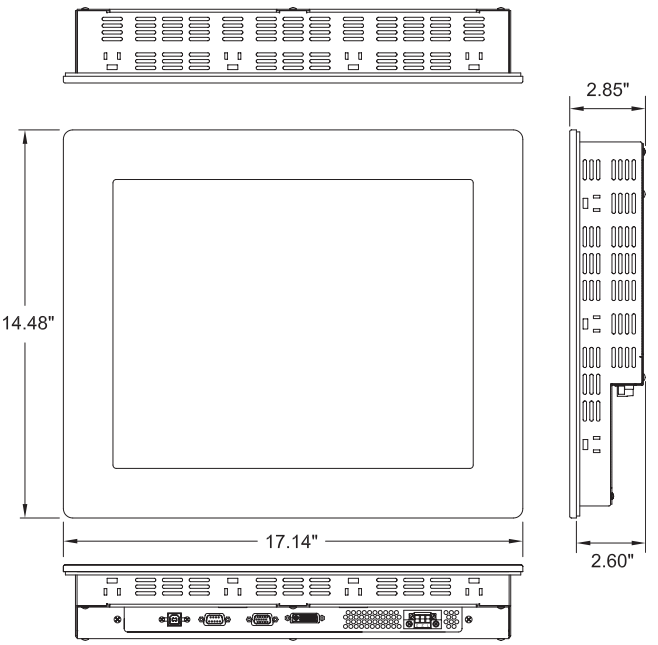
Specifications

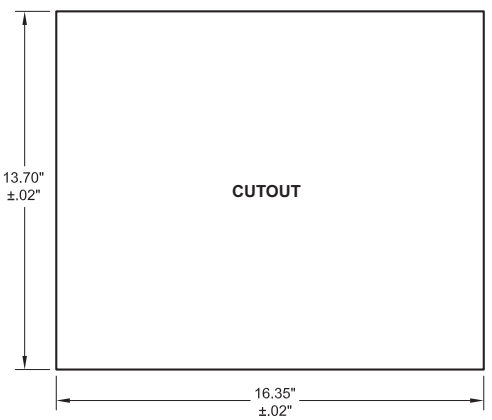
- 17" color TFT LCD display
- UL 508 and ANSI/ISA 12.12.01-2012 listed for Hazardous Locations: Class I, Division 2, Groups A, B, C, D; Class II, Division 2, Groups F and G and Class III hazardous locations when mounted in a NEMA Type 1, 4, 4X or 12 enclosure
- NEMA 4/4X/12 front bezel
- 2-year warranty
- RoHS compliant
- Integral 100-240 VAC power supply
- Simplified installation with no studs
- Thin design - only 2.4" behind bezel
- Accepts analog 15-pin Video input, digital input DVI-D
- VESA compliant - all modes up to SXGA, 16 million colors
- Optional 5-wire resistive touch screen with both RS-232 and USB interface

NOTE: Don't forget the optional cables shown on the Accessories page.

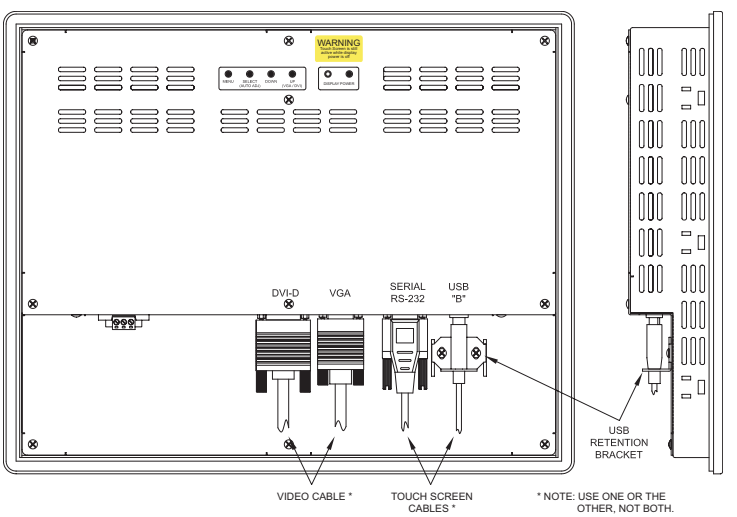
Dimensions



Mounting Cutout



Cable Connections



Atlas Industrial Flat Panel PC Monitors

ATM1900/ATM1900T

The *Atlas* ATM1900/ATM1900T is a high performance 19" color TFT flat panel monitor specifically designed for harsh industrial environments including Class I Division 2, Class II Division 2 and Class III Hazardous Locations. The ATM1900/ATM1900T accepts standard analog VGA input, or digital DVI input, and can display all VESA video modes up to 1280 x 1024 at 75Hz, 2000:1 contrast with 16 million colors. An optional 5-wire analog touch screen (ATM1900T) is available that offers both RS-232 and USB interface capability. The monitor is housed in a heavy duty steel chassis with a powder coated machined aluminum bezel. The monitor is certified to NEMA 4/4X/12 standards, is UL/CUL listed, meets CE requirements and is RoHS compliant. Panel mounting is simplified using convenient mounting clips instead of conventional studs. All monitors are shipped with a power input wiring receptacle, 6' VGA cable, 6' RS-232 cable (ATM1900T only), 2m USB Cable (ATM1900T only), mounting hardware, Quick Installation Guide, and CD-ROM containing Hardware User's Guide (ATM-19-USER) and touch screen driver software for Windows 98/NT/2000/XP/Vista/7.

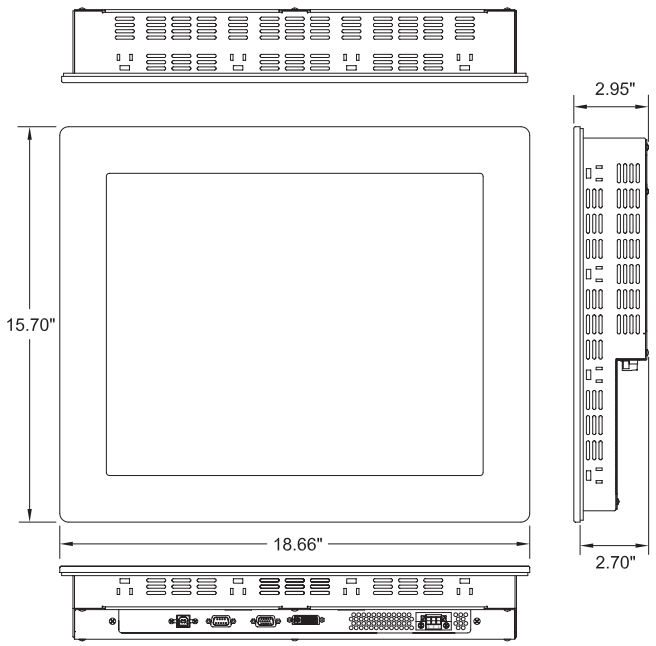
<--->/<--->

Specifications

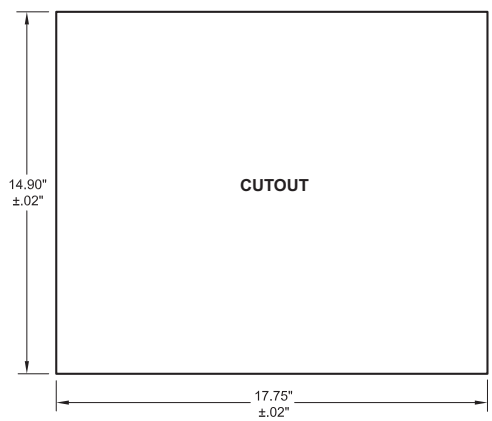
- 17" color TFT LCD display
- UL 508 and ANSI/ISA 12.12.01-2012 listed for Hazardous Locations: Class I, Division 2, Groups A, B, C, D; Class II, Division 2, Groups F and G and Class III hazardous locations when mounted in a NEMA Type 1, 4, 4X or 12 enclosure
- NEMA 4/4X/12 front bezel
- 2-year warranty
- RoHS compliant
- Integral 100-240 VAC power supply
- Simplified installation with no studs
- Thin design - only 2.4" behind bezel
- Accepts analog 15-pin Video input, digital input DVI-D
- VESA compliant - all modes up to SXGA, 16 million colors
- Optional 5-wire resistive touch screen with both RS-232 and USB interface

NOTE: Don't forget the optional cables shown on the Accessories page.

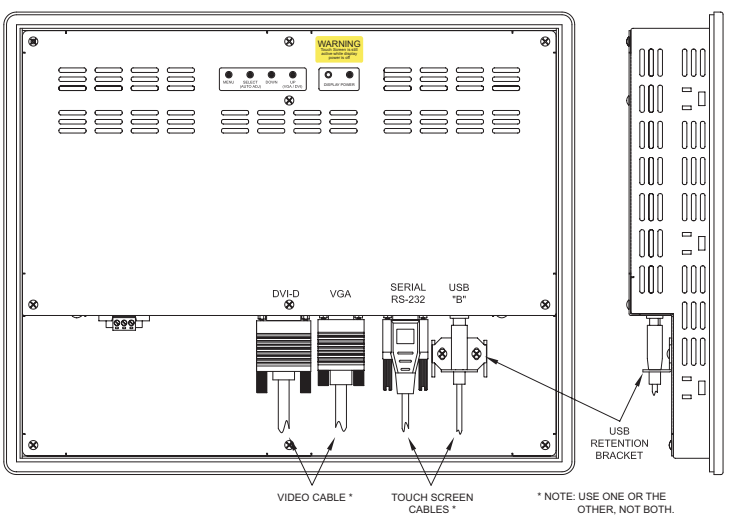
Dimensions



Mounting Cutout



Cable Connections

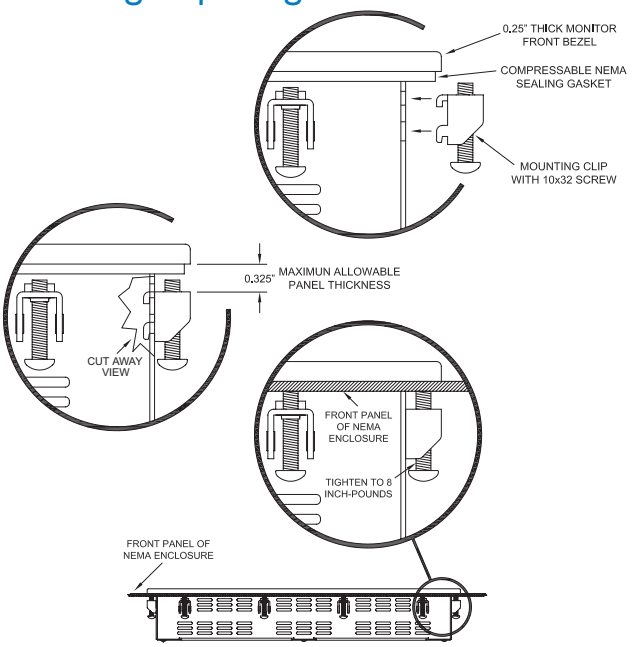


Atlas Industrial Flat Panel PC Monitors

Mounting clip installation

To install the monitor, make a cutout (according to the cutout diagram for the respective monitor) through one of the walls of your NEMA enclosure. Next, hold the monitor in place and install the mounting clips. The monitor uses "U"-shaped clips and a special gasket to achieve a proper seal. Tighten the clips to the point where the back of the monitor's bezel just begins to contact the front of the NEMA enclosure. The use of an adjustable torque driver is recommended. The screws should be tightened to 8 inch-pounds. Tighten the clips in a cross pattern to develop an even pressure on the sealing gasket. DO NOT OVERTIGHTEN AS DAMAGE CAN RESULT, CAUSING LOSS OF SEALING INTEGRITY.

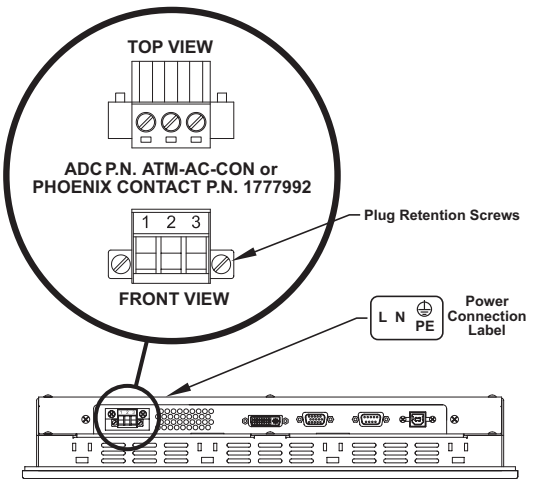
Mounting Clip Diagram


0.25" THICK MONITOR FRONT BEZEL
COMPRESSABLE NEMA SEALING GASKET
MOUNTING CLIP WITH 10x32 SCREW
0.325"
MAXIMUN ALLOWABLE PANEL THICKNESS
CUT AWAY VIEW
FRONT PANEL OF NEMA ENCLOSURE
TIGHTEN TO 8 INCH-POUNDS
FRONT PANEL OF NEMA ENCLOSURE

Connecting power

The monitor is powered from 100-240 VAC, 50/60 Hz. Power is connected to the monitor through a removable Phoenix Contact plug (ADC P.N. ATM-AC-CON or Phoenix Contact P.N. 1777992) that allows for screw termination of field wiring. The use of 18 AWG or greater (12 AWG maximum wore) wire is recommended. Connect the field wiring according to the appropriate table below. After the connections are made, make sure the power cnoconne screws (the two screws shown in the "Front View" below) are securely tightened. This will prevent the plug from pulling out.

Power Wiring Diagram

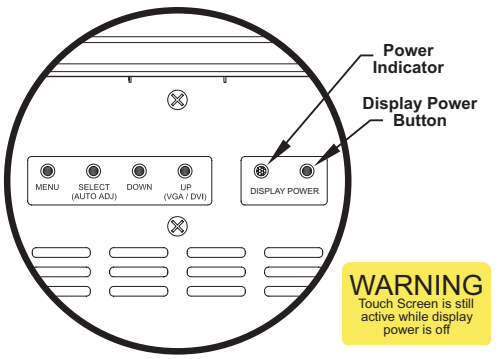


100 VAC - 240 VAC INPUT (1.0 Amps Min)		
1 2 3	PIN No.	Definition
	1	AC Line Input
	2	AC Neutral Return
	3	Protective Earth Ground

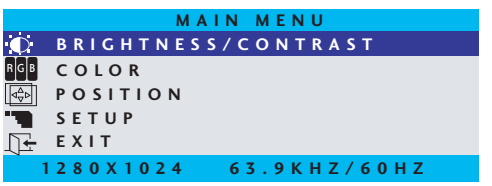
Setting the On-Screen Display (OSD) controls

The On Screen Display (OSD) controls are used for making adjustments to the monitor's settings and are located on the back of the monitor. They consist of a single LED and five pushbuttons (functions are described in Chapter 3 of the respective monitor's Hardware User's Guide) located on the Documentation and Driver CD, or downloadable from the Online Documentation area of the *AutomationDirect* Web site.

OSD Controls



OSD Main Menu Display



Atlas PC Monitor Accessories

Accessories & Replacement Parts

Part Number	Description	Price
ATM-CBL-VGA10	10 ft. 15-pin coaxial VGA cable. Connects any Atlas monitor to a standard VGA card.	<--->
ATM-CBL-VGA25	25 ft. 15-pin coaxial VGA cable. Connects any Atlas monitor to a standard VGA card.	<--->
ATM-CBL-VGA50	50 ft. 15-pin coaxial VGA cable. Connects any Atlas monitor to a standard VGA card.	<--->
ATM-CBL-DV2M	6 ft. (2 meter) DVI (type D) video cable. Connects M1700 and M1900 to a standard DVI-D port. DVI cables provide a higher bandwidth video interface than the VGA cables.	<--->
ATM-CBL-DV3M	10 ft. (3 meter) DVI (type D) video cable. Connects M1700 and M1900 to a standard DVI-D port. DVI cables provide a higher bandwidth video interface than the VGA cables.	<--->
ATM-CBL-10	10 ft. serial communication cable. Connects Atlas monitor to std. 9-pin RS-232 port.	<--->
ATM-CBL-25	25 ft. serial communication cable. Connects Atlas monitor to std. 9-pin RS-232 port.	<--->
ATM-CBL-50	50 ft. serial communication cable. Connects Atlas monitor to std. 9-pin RS-232 port.	<--->
USB-CBL-AB3	3-ft (0.9 meter) Standard USB 2.0 cable with Standard-A plug to Standard-B plug. Suitable for all USB devices.	<--->
USB-CBL-AB6	6-ft (1.8 meter) Standard USB 2.0 cable with Standard-A plug to Standard-B plug. Suitable for all USB devices.	<--->
USB-CBL-AB10	10-ft (3 meter) Standard USB 2.0 cable with Standard-A plug to Standard-B plug. Suitable for all USB devices.	<--->
USB-CBL-AB15	15-ft (4.6 meter) Standard USB 2.0 cable with Standard-A plug to Standard-B plug. Suitable for all USB devices.	<--->
ATM-AC-CON	Replacement Power Wiring Connector for AC Powered Units.	<--->
ATM-CLIP	Replacement flat panel mounting clip kit. Package of 16 clips and screws.	<--->

USB-CBL-AB3

USB-CBL-AB6

USB-CBL-AB10

USB-CBL-AB15

ATM-CBL-VGA10

ATM-CBL-VGA25

ATM-CBL-VGA50

ATM-CBL-DV2M

ATM-AC-CON

ATM-CBL-DV3M

ATM-CBL-10

ATM-CLIP

ATM-CBL-25

ATM-CBL-50

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